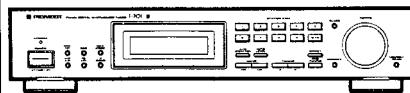


Service Manual



ORDER NO.
ARP2466

FM/AM DIGITAL SYNTHESIZER TUNER **F-701** **F-701-G**

F-701 AND F-701-G HAVE THE FOLLOWING :

Type	Model		Power Requirement	Remarks
	F-701	F-701-G		
HEWZ	○	—	AC 220–230 V, 230–240 V (switchable)*	
HEWZI	—	○	AC 220–230 V, 230–240 V (switchable)*	
HE	○	○	AC 220–230 V, 230–240 V (switchable)*	

* Change the connection of the power transformer's primary wiring.

- This manual is applicable to the following : F-701/HEWZ and HE ; F-701-G/HEWZI and HE.
- For the following : F-701/HE ; F-701-G/HE and HEWZI, refer to page 34.
- F-701-G is the same as F-701 except for color.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.

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FO MAY 1992 Printed in Japan

1. EXPLODED VIEWS, PACKING AND PARTS LIST

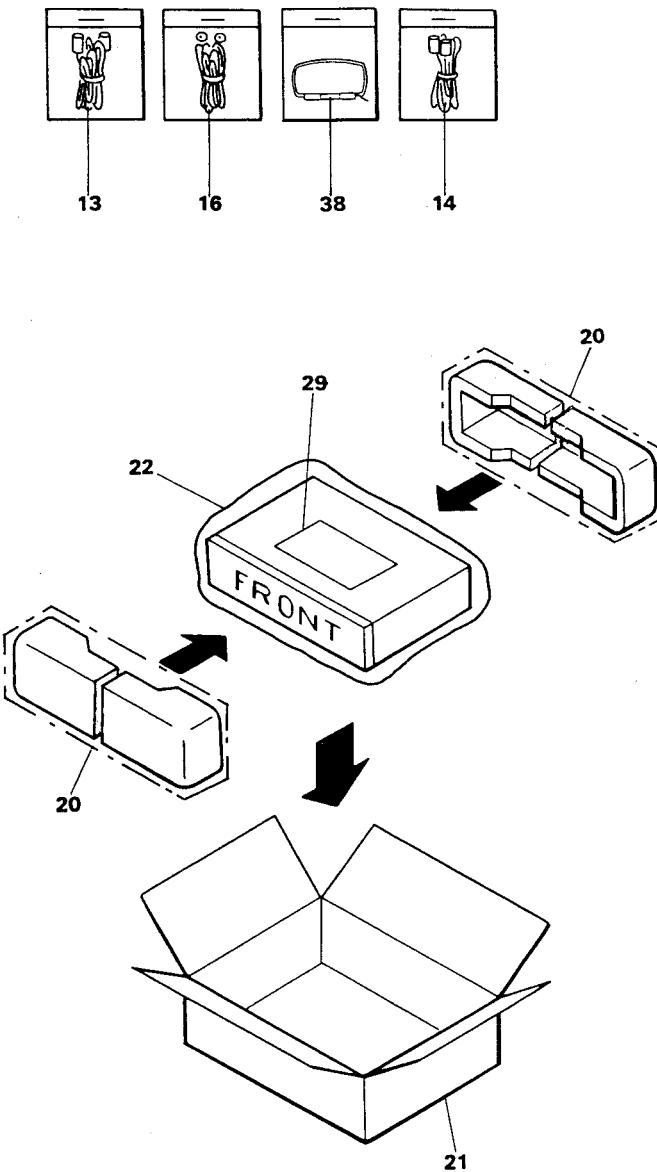
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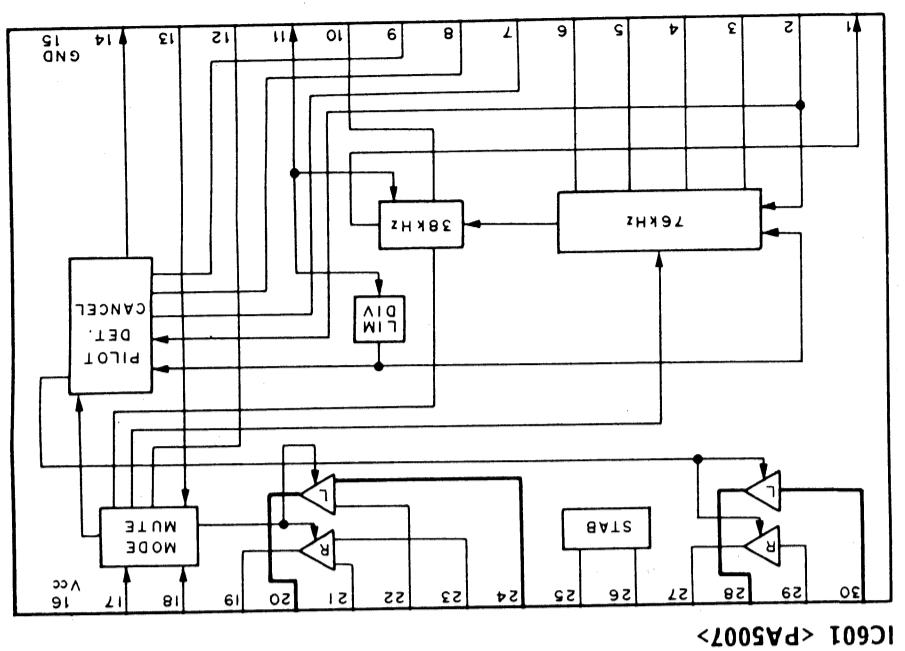
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

Parts List

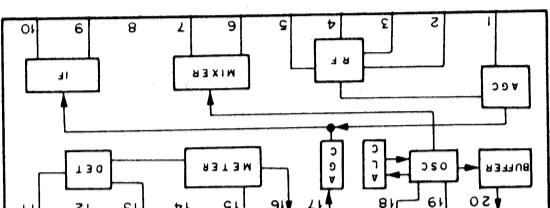
Mark No.	Description	Parts No.
1	ROTARY KNOB	AAA1012
2	BUTTON (MEMORY SCAN, MEMORY, CLASS)	AAD1682
3	STATION BUTTON A(ABS)	AAD2218
4	STATION BUTTON B(ABS)	AAD2219
5	PANEL	AAK2282
6	FL FILTER	AAK2283
7	NAME PLATE (METAL)	AAM1029
8	SCREW	ABA-298
9	SCREW (STEEL)	ABA1009
10	SCREW (STEEL)	ABA1011
11	SCREW (STEEL)	ABA1048
12	SCREW (STEEL)	ABA1053
13	PLUG CORD	ADE-052
14	CORD WITH PLUG	ADE-085
Δ	AC POWER CORD	ADG1019
16	FM ANTENNA	ADH1002
NSP 17	NYLON BINDER	AEC-093
18	STRAIN RELIEF	AEC-882
NSP 19	CU PLATE	AEF1006
20	FRONT REAR PAD	AHA1095
21	PACKING CASE	AHD2241
22	PACKING SHEET	AHG1017
23	PANEL BASE	AMB1962
NSP 24	INSULATOR ASSY	AMR2140
NSP 25	CHASSIS	ANA1141
26	FRONT PANEL	ANB1497
NSP 27	REAR PANEL	ANC1866
28	GROUNG PLATE	ANK1091
29	OPE. INSTRUCTIONS (German/Italian)	ARC1334
● 30	MAIN ASSEMBLY	AWZ4098
31	DISPLAY ASSEMBLY	AWP1041
32	BONNET	AZN1745
33	SCREW	BBT30P060FZK
34	SCREW	BPZ26P080FMC
35	NUT	NK70FUC
36	LED LENS	PNW2019
37	SCREW	VMZ30P060FCU
38	LOOP ANTENNA(L1)	ATB1005
NSP 39	POWER ASSEMBLY	AWZ4100
NSP 40	SPACER	AEB1084

PACKING

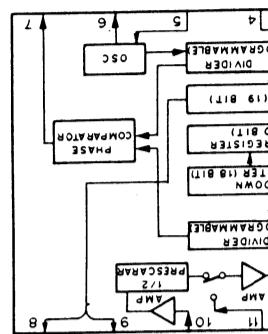




IC601 <LA1247>



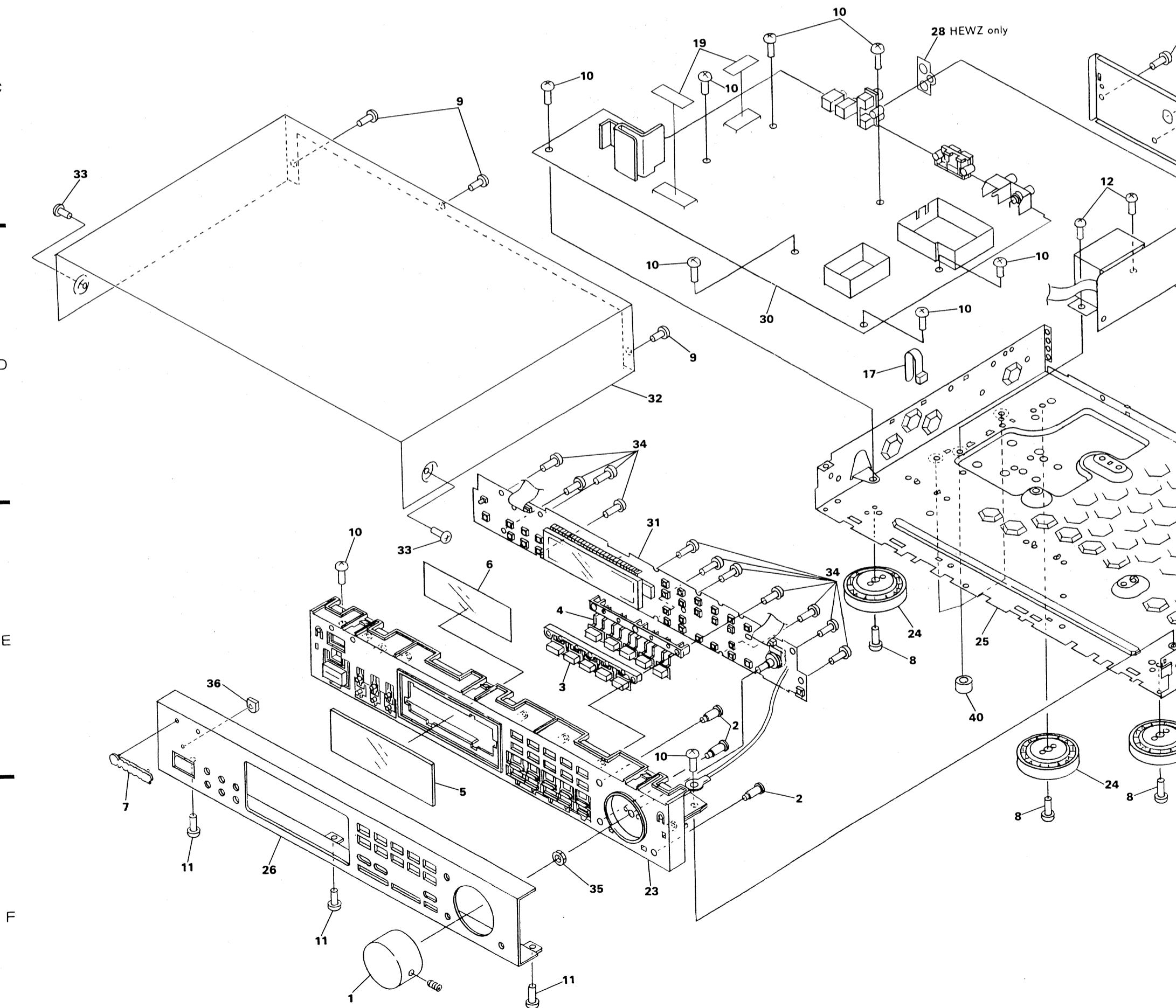
IC501 <LA1247>

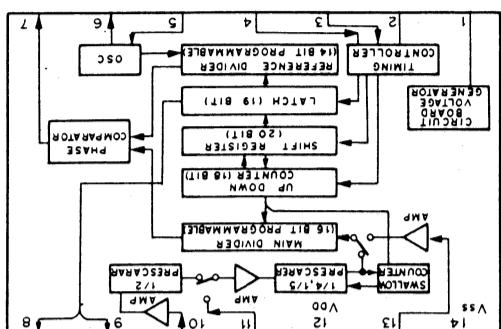


A

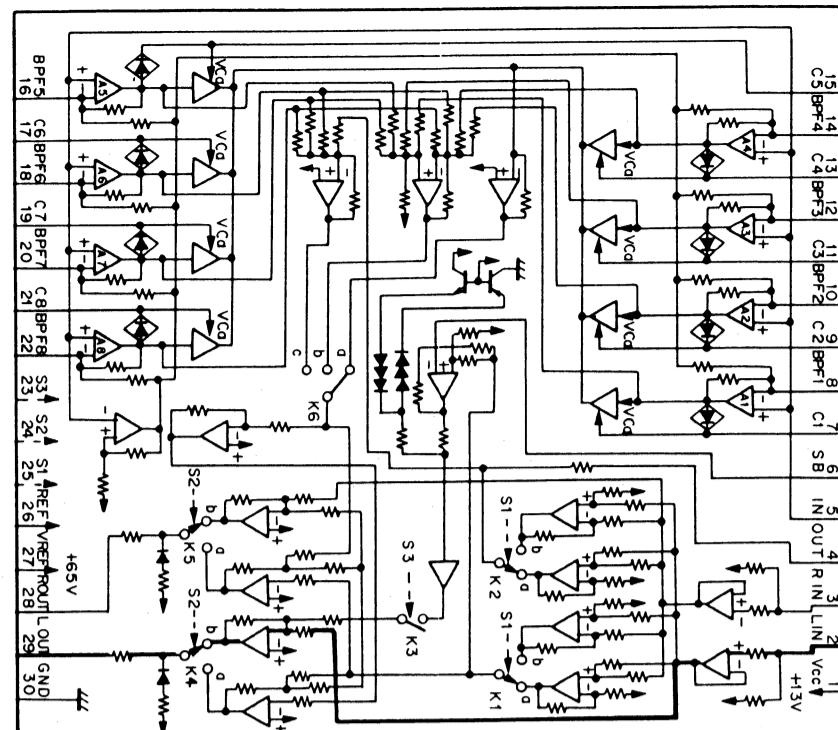
B

EXPLODED VIEWS

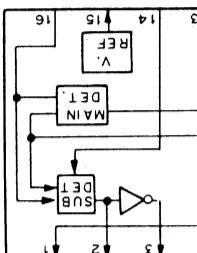




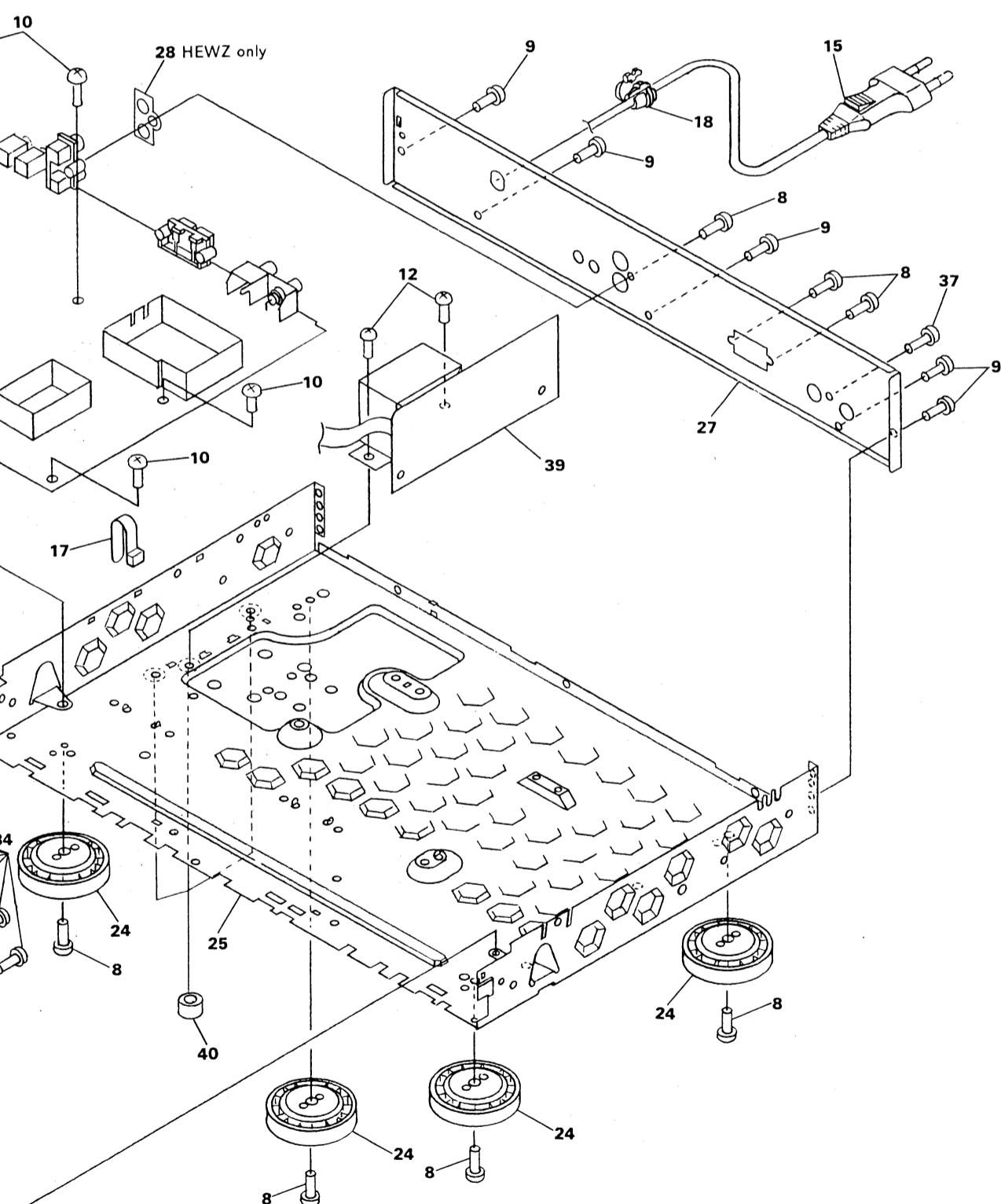
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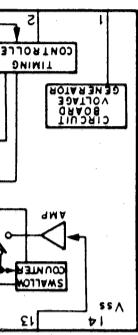


IC301 <PA0042>



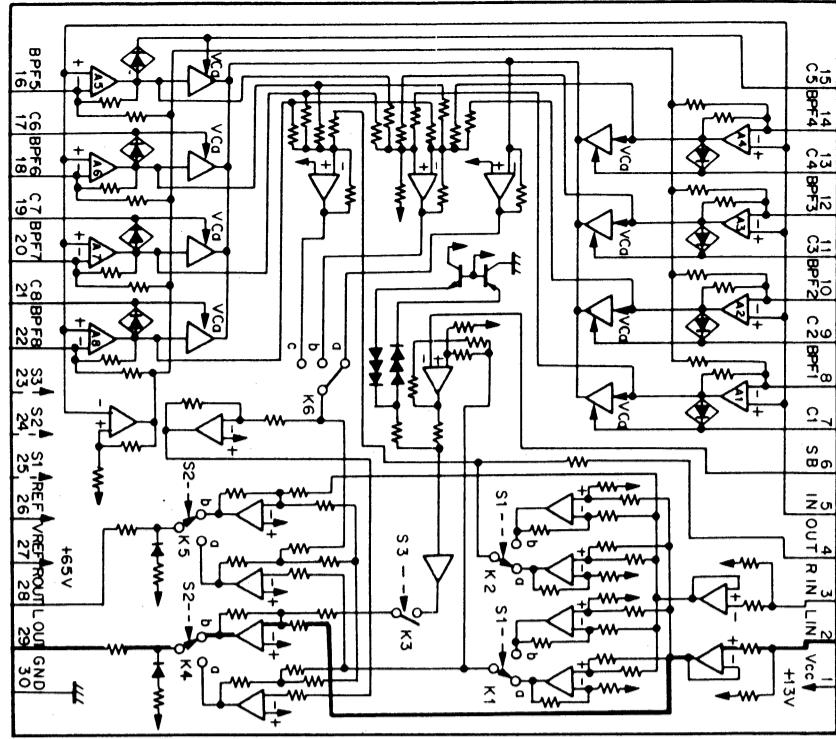
IC401 <CX-7925B>



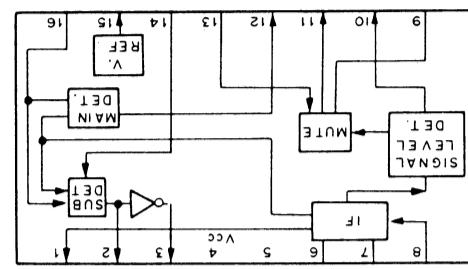


IC401

<CX-1>



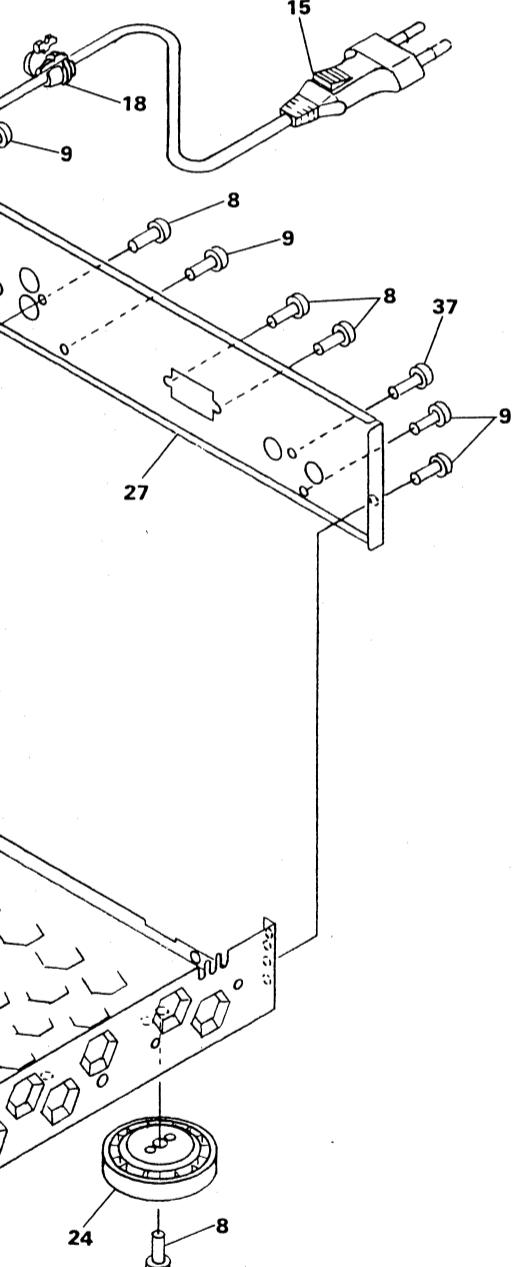
IC301 <PA0042>



IC201 <PA5008>

A

B



2. SCHEMATIC AND PCB CONNECTIONS DIAGRAMS

1. RESISTORS :

Indicated in Ω , 1/4W, 1/6W and 1/8W, $\pm 5\%$ tolerance unless otherwise noted k ; $k\Omega$, M ; $M\Omega$, (F) ; $\pm 1\%$, (G) ; $\pm 2\%$, (K) ; $\pm 10\%$, (M) ; $\pm 20\%$ tolerance.

2. CAPACITORS :

Indicated in capacity (μF)/voltage(V) unless otherwise noted p; pF.
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT :

\square DC voltage (V) at no input signal unless otherwise noted.
Value in () is DC voltage at rated power.
 $\square m A$ or $\square -m A$; DC current at no input signal unless otherwise noted.
 $\square m V$; Signal voltage at FM 1kHz ± 75 kHz DEV.

4. OTHERS :

\rightarrow ; Signal route
 \odot ; Adjustment point
 ∇ (Red) ; Measurement point
The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 \times marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

C

D

5. SWITCHES :

DISPLAY ASSEMBLY

S901 :	SSS
S902 :	ST1
S903 :	ST2
S904 :	ST3
S905 :	ST4
S906 :	ST5
S907 :	ST6
S908 :	ANT A/B
S909 :	ST7
S910 :	ST8
S911 :	ST9
S912 :	ST0/ST10
S913 :	CLASS
S914 :	MEMORY SCAN
S915 :	RF ATT
S916 :	FM (BAND)
S917 :	AM (BAND)
S918 :	IF BAND
S919 :	MEMORY
S920 :	- (TUNING)
S921 :	+ (TUNING)
S922 :	POWER
S923 :	MPX MODE
S924 :	MPX NR
S925 :	AUTO OPERATION
S926 :	AUTO LEVEL
S927 :	FINE TUNING
S928 :	DIRECT
S929 :	TUNING

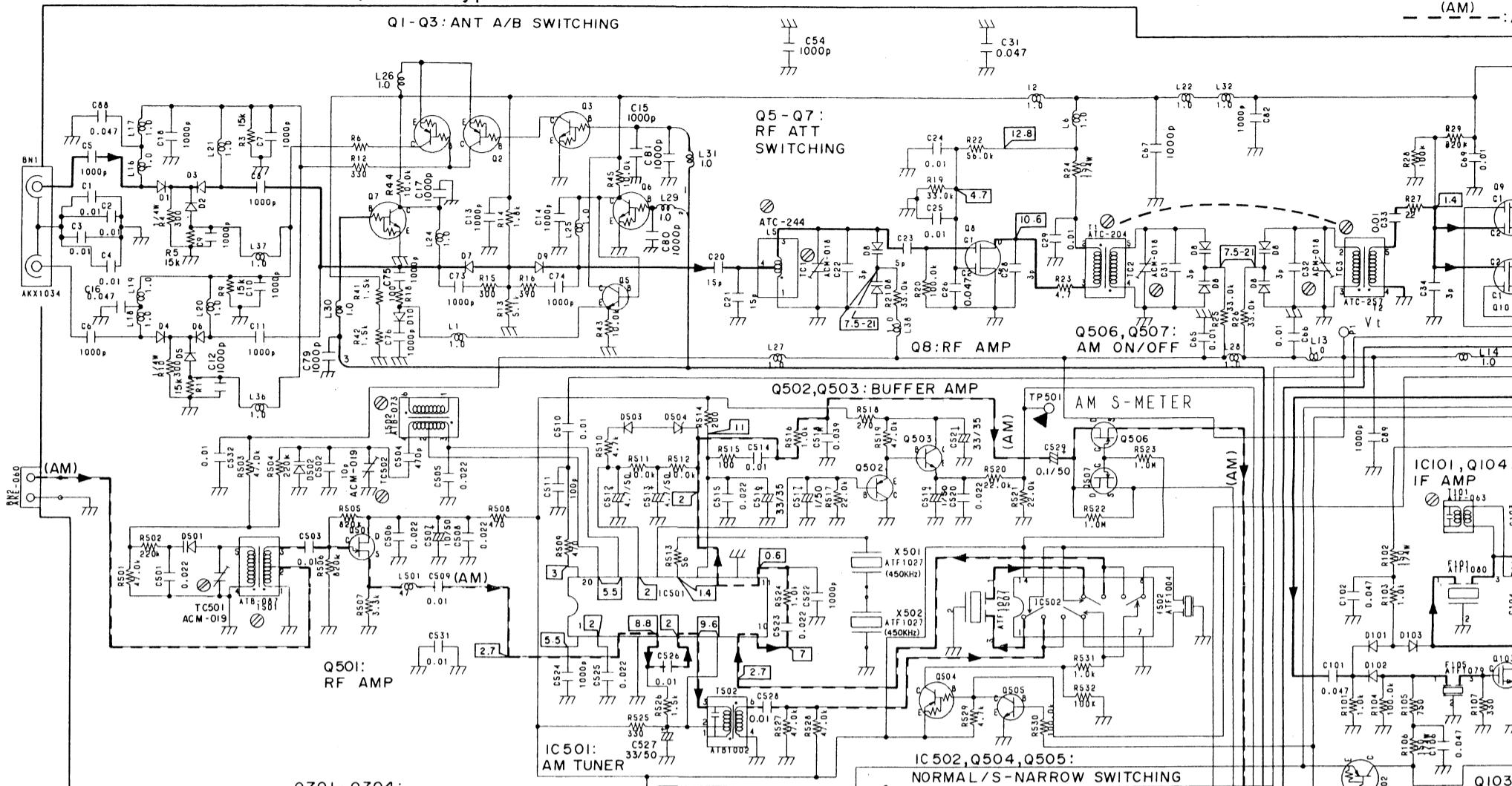
E

F

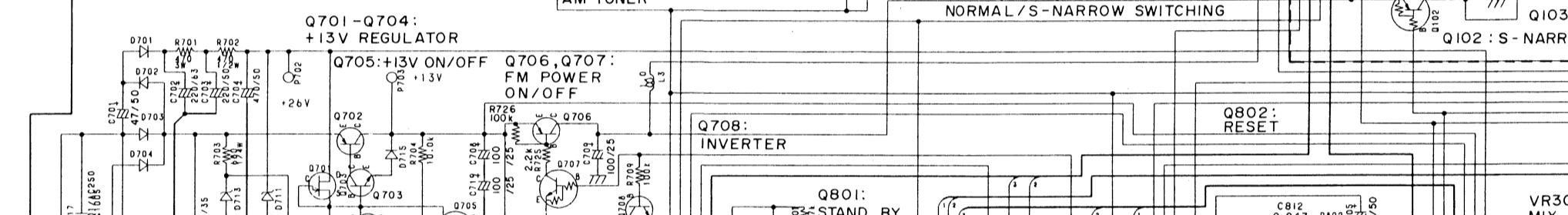
2.1 MAIN AND POWER ASSEMBLIES

MAIN ASSEMBLY (AWZ4098 : For HEWZ and HEWZI types)
 (AWZ4099 : For HE type)

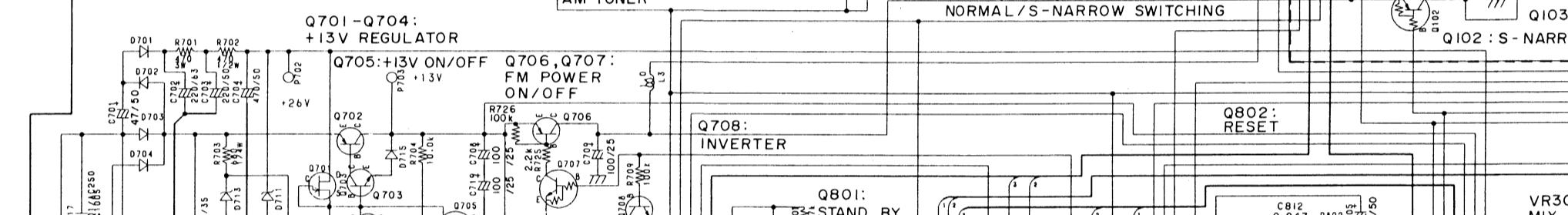
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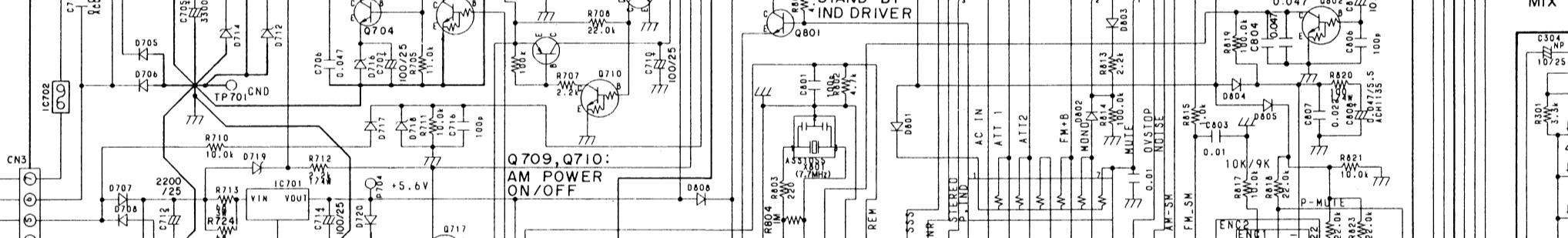
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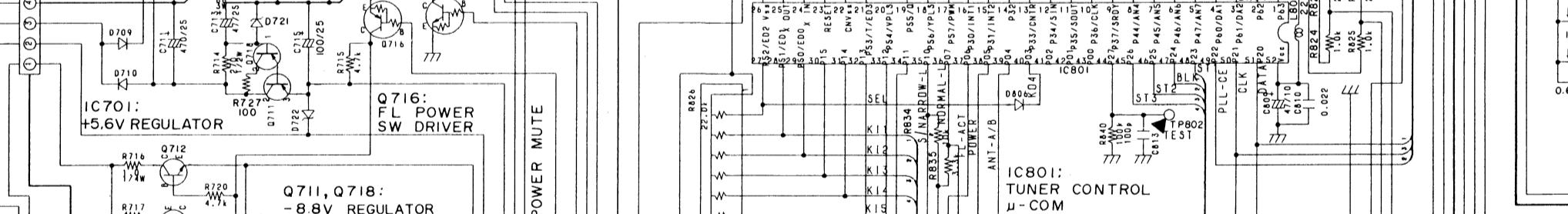
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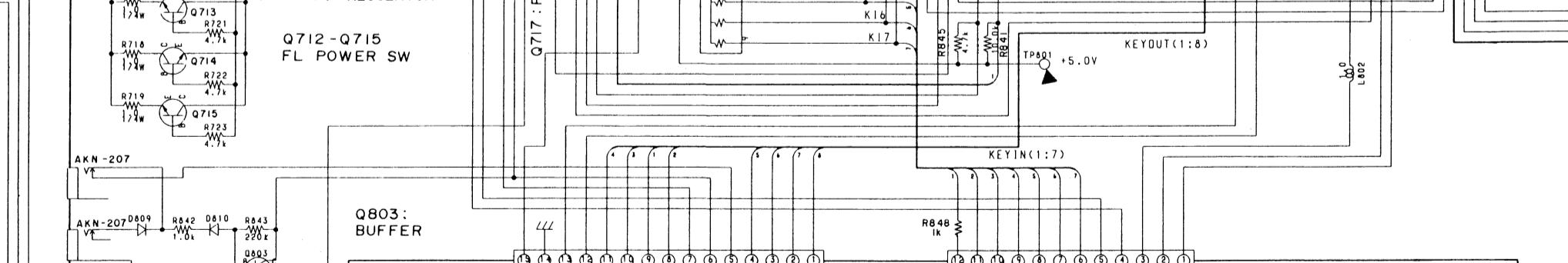
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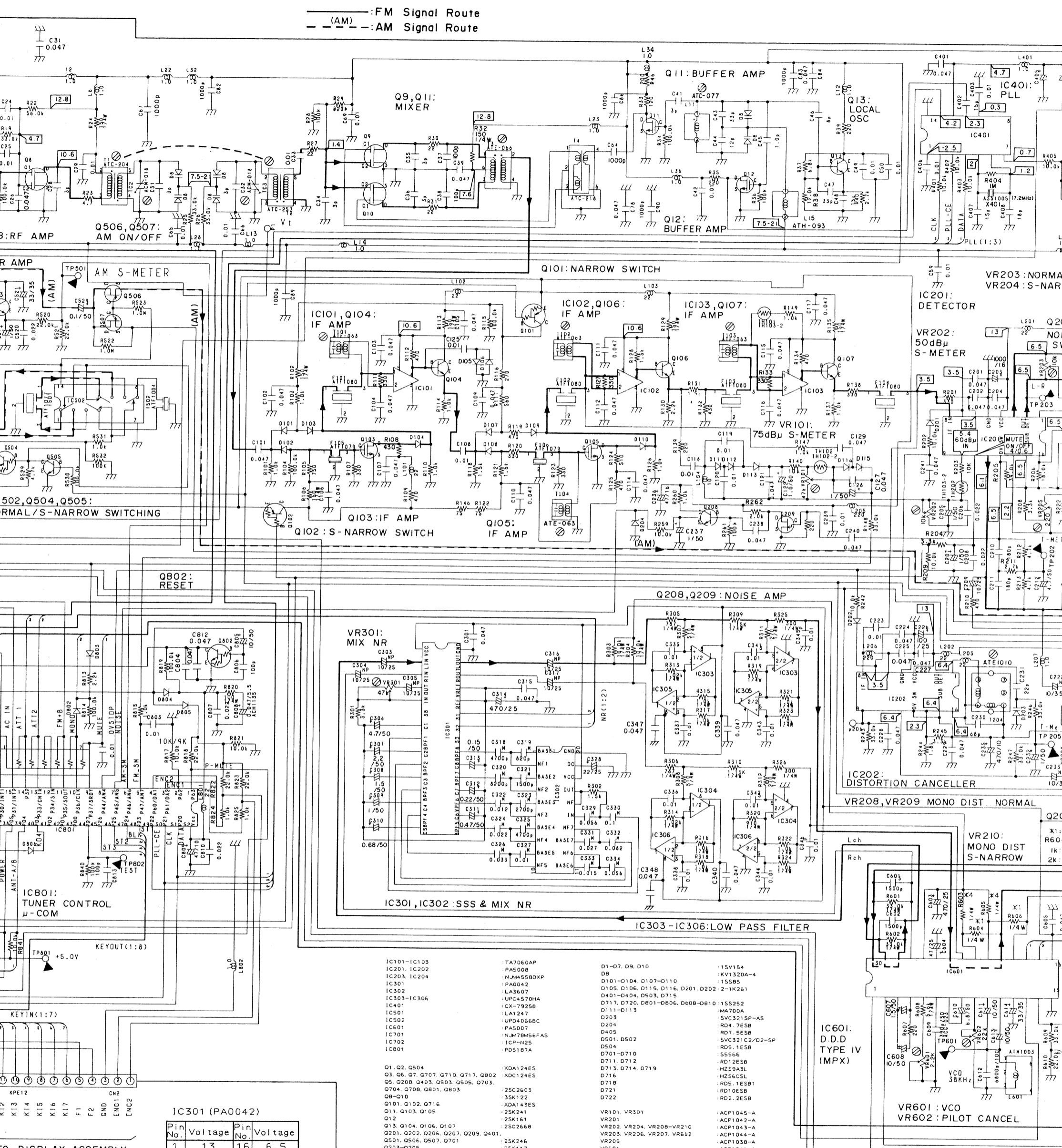
E



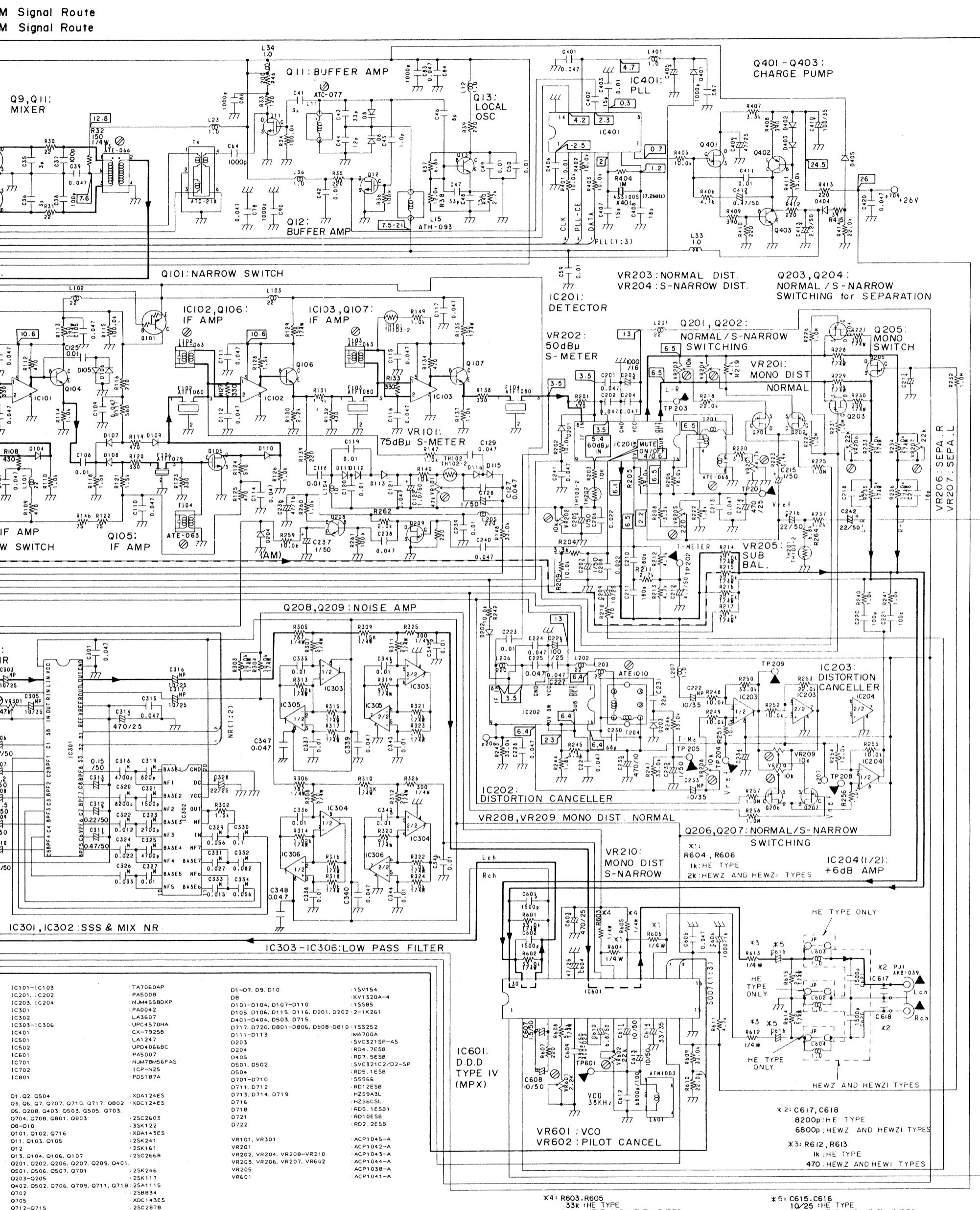
F



Pin No.	Voltage	Pin No.	Voltage
1	13	16	6.5
2	6.5	17	6.5
3	6.5	18	6.5
4	-	19	6.5
5	6.5	20	6.5
6	-	21	6.5
7	6.5	22	6.5
8	6.5	23	0 or 4
9	6.5	24	0 or 4
10	6.5	25	0 or 4
11	6.5	26	6.4
12	6.5	27	6.4
13	6.5	28	6.5
14	6.5	29	6.5
15	6.5	30	-



A



NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

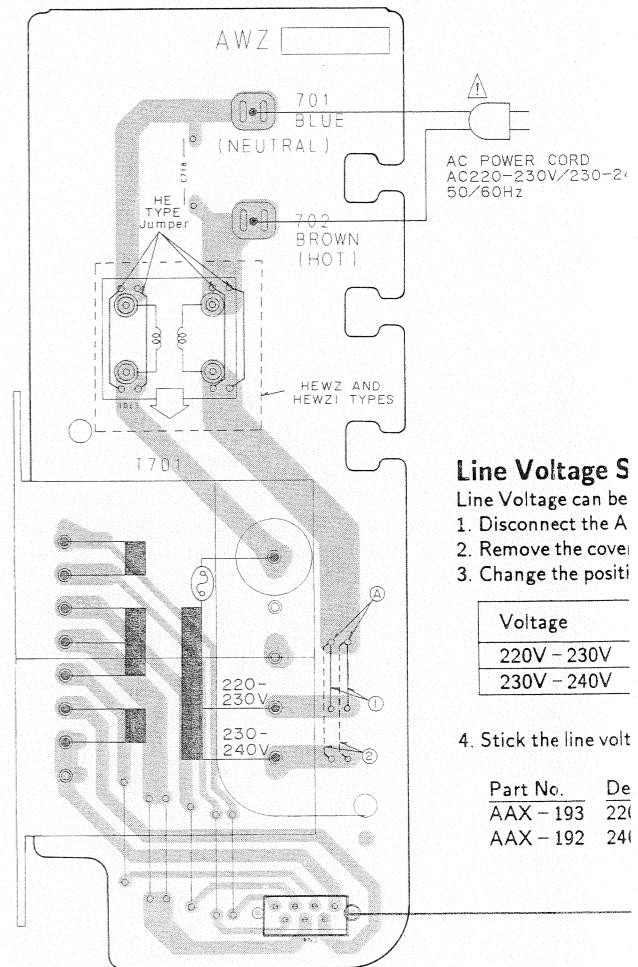
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504		Transistor
Q215		Radiator type transistor
D203		Diode
R237		Resistor
C513		Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

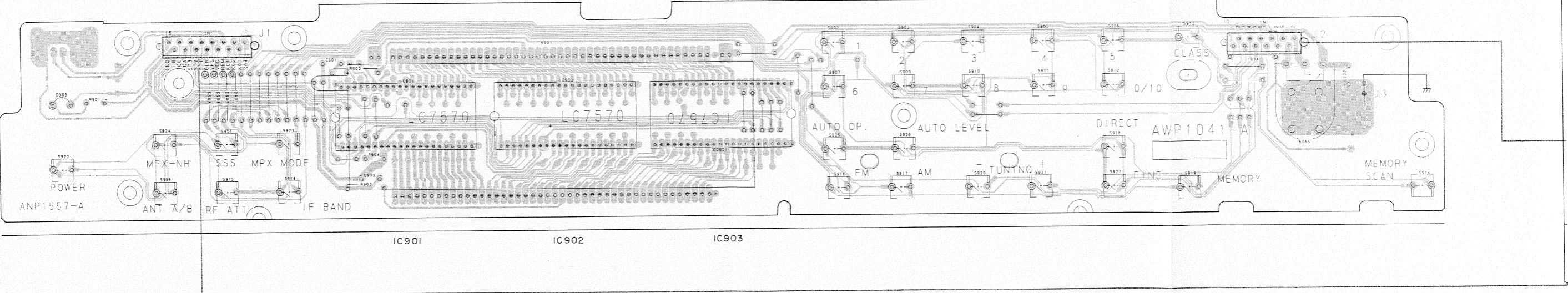
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with shows negative terminal.
4. The diode terminal marked with shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

POWER ASSEMBLY



DISPLAY ASSEMBLY (AWP1041)



MAIN ASSEMBLY
AWZ4098 : For HEWZ and
HEWZI types
AWZ4099 : For HE type

701 BLUE
702 BROWN (HOT)
HEWZ AND HEWZI TYPES

Line Voltage Selection

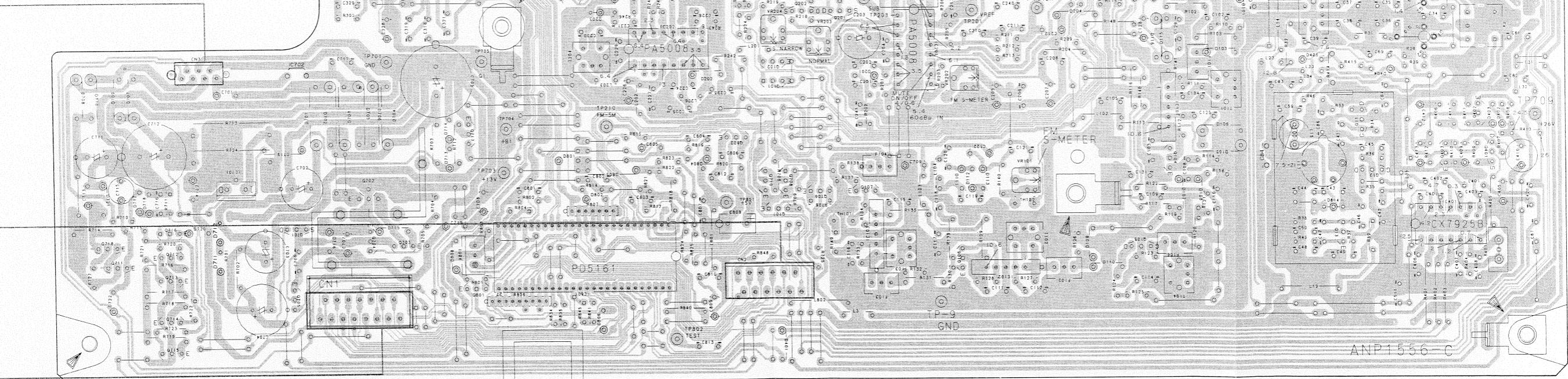
Line Voltage can be changed as follows :

1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the position of the jumper wire A as follows.

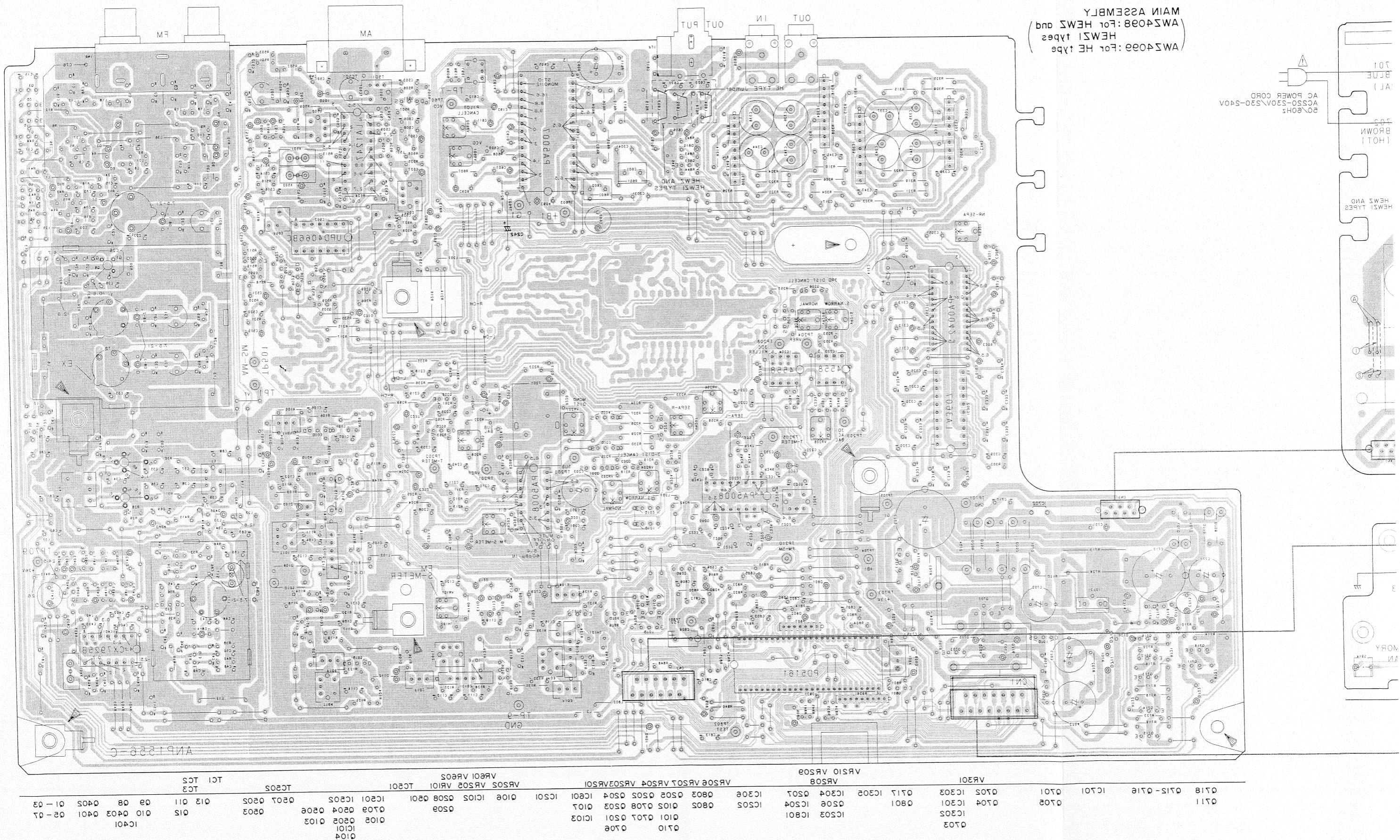
Voltage	jumper wire A position
220V - 230V	①
230V - 240V	②

4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX-193	220V label
AAX-192	240V label



VR301	VR208	VR206 VR207 VR204 VR203 VR201	VR601 VR602	VR202 VR205 VR101	TC501	TC502	TC1	TC2	TC3
Q718 Q712-Q716 IC701 Q701	Q702 IC303 Q717 IC305 IC304 Q207	IC306 Q803 Q205 Q202 Q204	IC601 IC201 Q106 IC102 Q208 Q501	Q209	IC501 IC502 Q502	Q507 Q503	Q13 Q11	Q9 Q8	Q402 Q1-Q3
Q711	Q705	Q801 IC301	IC202 Q802 Q102 Q708 Q203	Q107	Q709 Q504 Q506	Q105 Q505 Q103	Q12	Q10 Q403	Q401 Q5-Q7
		IC302 IC203 IC801	Q101 Q707 Q201	IC103	IC101	IC103		IC401	
			Q710	Q706	Q104				

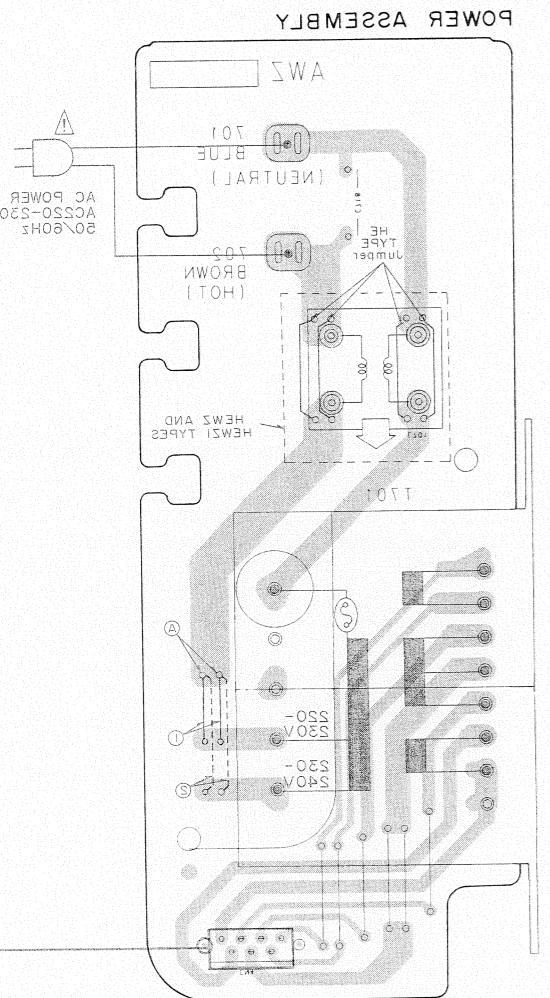


3

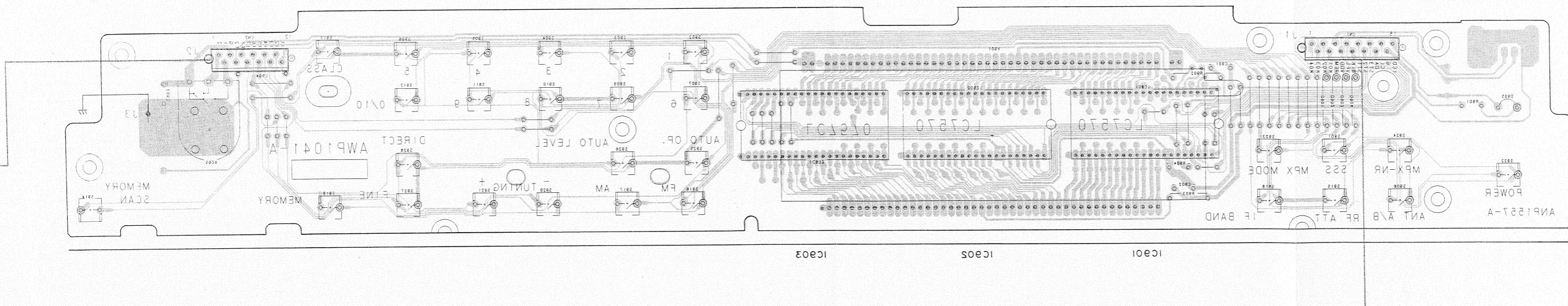
s1

2

This P.C.B. connection diagram is viewed from the foil side.



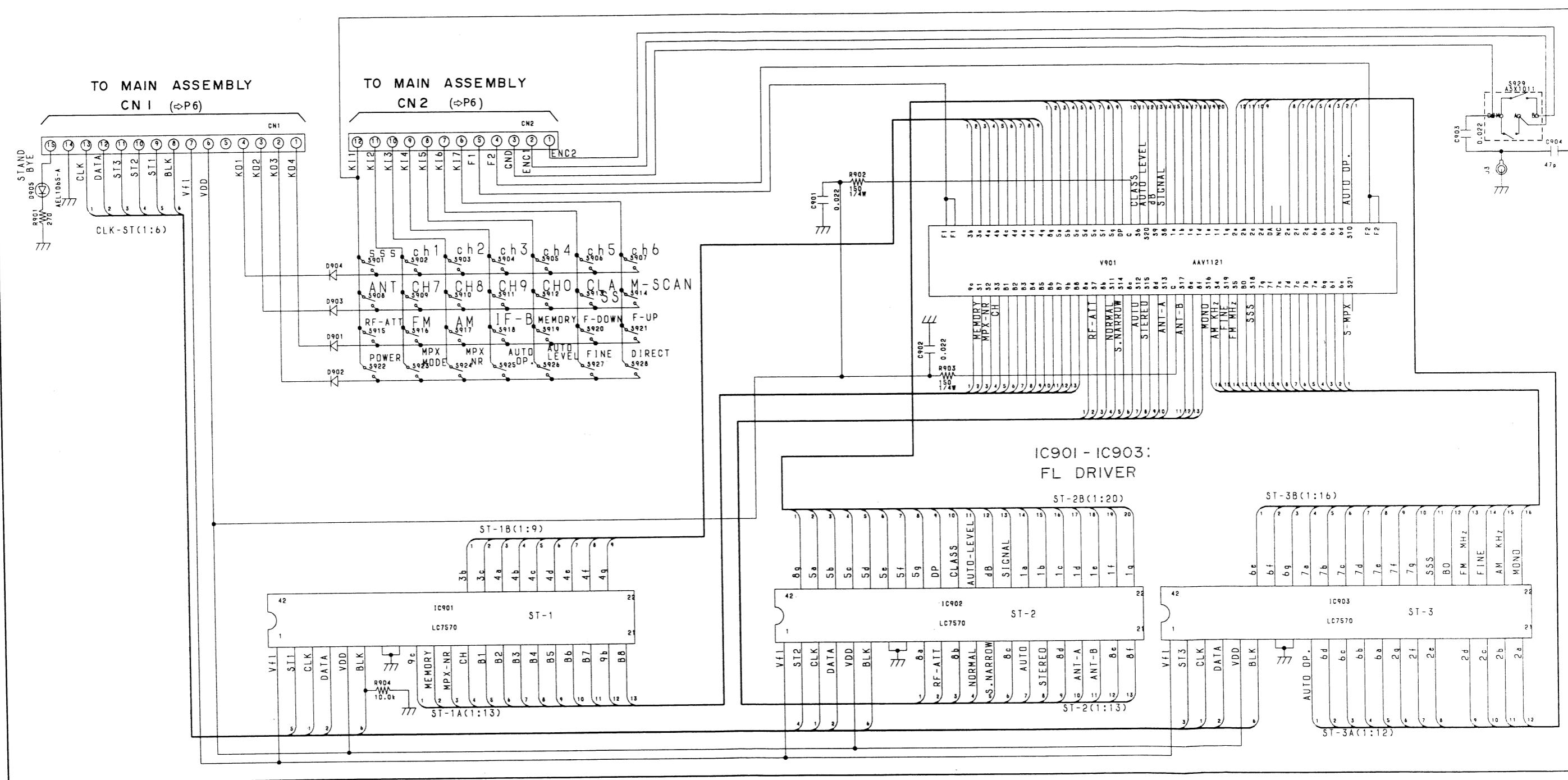
DISPLAY ASSEMBLY (AMP1041)



2.2 DISPLAY ASSEMBLY

A

DISPLAY ASSEMBLY (AWP1041)



1

2

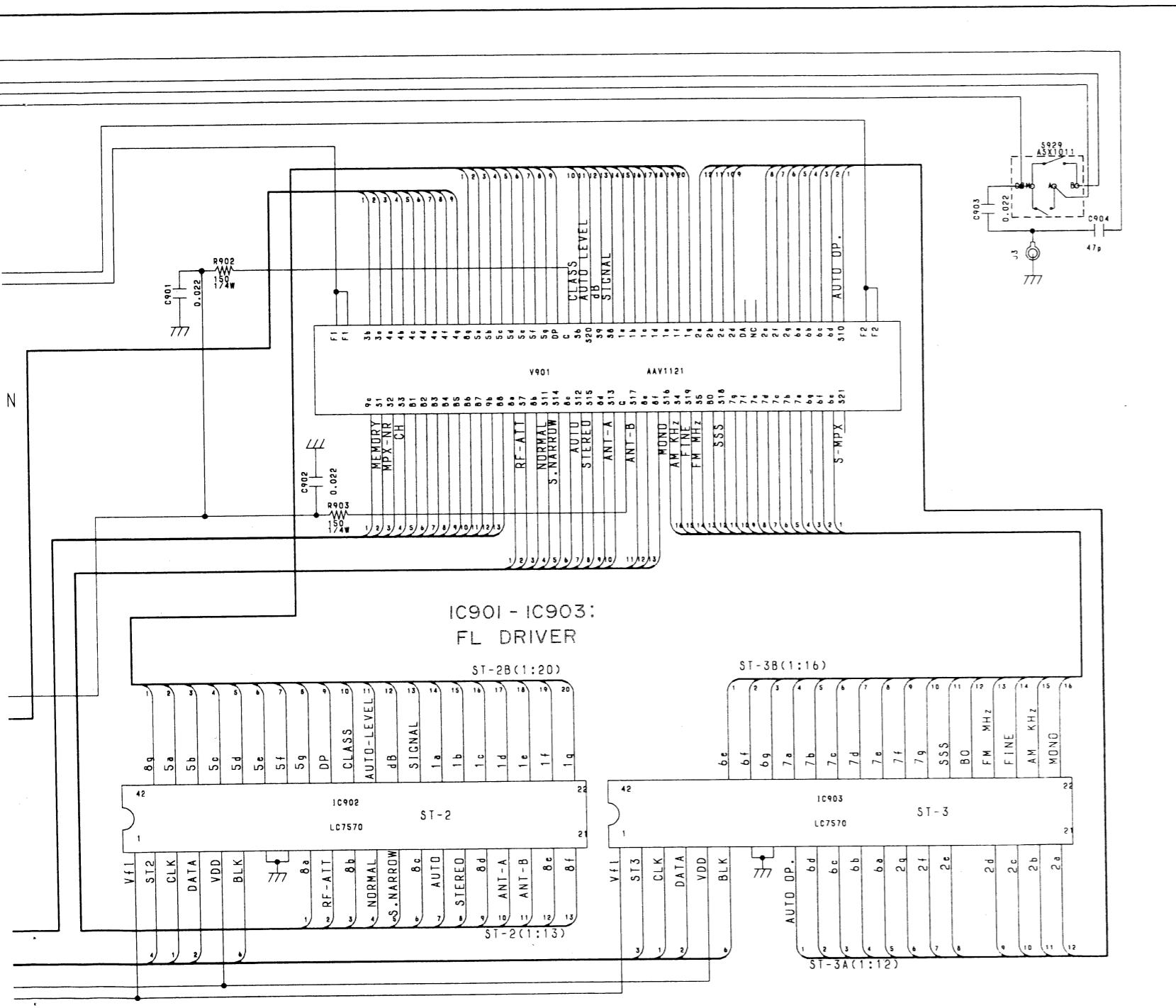
3

4

5

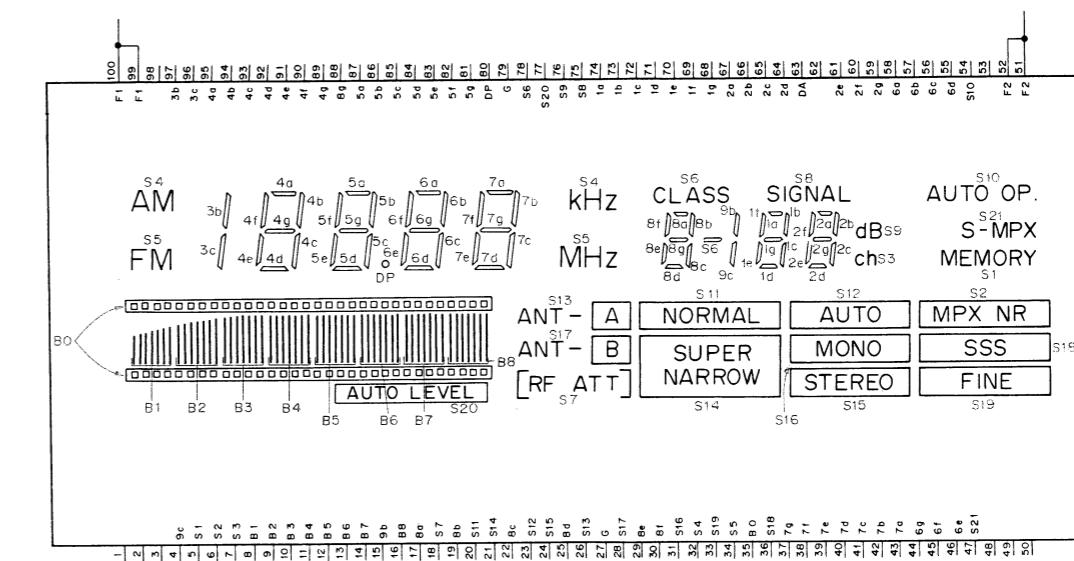
6

A



5

7



19

3. PCB PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 - The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
 - When ordering resistors, first convert resistance values into code form as shown in the following examples.
- Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).
- $560\Omega \rightarrow 56 \times 10^3 \rightarrow 561$ RD1/8PM $\boxed{5}\boxed{6}\boxed{1}J$
- $47k\Omega \rightarrow 47 \times 10^3 \rightarrow 473$ RD1/4PS $\boxed{4}\boxed{7}\boxed{3}J$
- $0.5\Omega \rightarrow 0R5$ RN2H $\boxed{0}\boxed{R}\boxed{5}K$
- $1\Omega \rightarrow 010$ RS1P $\boxed{0}\boxed{1}\boxed{0}K$

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

 $5.62k\Omega \rightarrow 562 \times 10^3 \rightarrow 5621$ RN1/4PC $\boxed{5}\boxed{6}\boxed{2}\boxed{1}F$

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
LIST OF ASSEMBLIES					
① MAIN assembly NSP POWER assembly	AWZ4098 AWZ4100	Q209,401 Q402 Q403 Q501 Q502	N-FET TRANSISTOR TRANSISTOR N-FET TRANSISTOR	2SK246 2SA1115 2SC2603 2SK246 2SA1115	
DISPLAY assembly	AWP1041	Q503 Q504 Q505 Q506,507 Q701	TRANSISTOR TRANSISTOR TRANSISTOR N-FET N-FET	2SC2603 XDA124ES 2SC2603 2SK246 2SK246	
MAIN ASSEMBLY					
SEMICONDUCTORS					
IC101-103 AMPLIFIER IC IC201,202 FM IC IC203,204 OP-AMP IC IC301 FM-NR IC302 GEQ IC	TA7060AP PA5008 NJM4558DXP PA0042 LA3607	Q702 Q703,704 Q705 Q706 Q707	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	2SB834 2SC2603 XDC143ES 2SA1115 XDC124ES	
IC303-306 OP-AMP IC IC401 PLL SYNTHESIZER IC IC501 AM IC IC502 LOGIC IC IC601 MPX IC	UPC4570HA CX-7925B LA1247 UPD4066BC PA5007	Q708 Q709 Q710 Q711 Q712-715	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	2SC2603 2SA1115 XDC124ES 2SA1115 2SC2878	
IC701 REGULATOR IC IC702 IC PROTECTOR IC801 TUNER CONTROL μ -COM Q1,2 TRANSISTOR Q3 TRANSISTOR	NJM78M56FAS ICP-N25 PD5187A XDA124ES XDC124ES	Q716 Q717 Q718 Q801 Q802	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	XDA143ES XDC124ES 2SA1115 2SC2603 XDC124ES	
Q5 TRANSISTOR Q6,7 TRANSISTOR Q8-10 FET Q11 MOS-FET Q12 N-FET	2SC2603 XDC124ES 3SK122 2SK241 2SK161	Q803 D1-7 D8 D9,10 D101-104	TRANSISTOR TRANSISTOR VARI-CAP DIODE VARI-CAP DIODE DIODE	2SC2603 1SV154 KV1320A-4 1SV154 1SS85	
Q13 TRANSISTOR Q101,102 TRANSISTOR Q103 MOS-FET Q104 TRANSISTOR Q105 MOS-FET	2SC2668 XDA143ES 2SK241 2SC2668 2SK241	D105,106 D107-110 D111-113 D115,116 D201,202	DIODE DIODE DIODE DIODE DIODE	2-1K261 1SS85 MA700A 2-1K261 1SS252	
Q106,107 TRANSISTOR Q201,202 N-FET Q203-205 N-FET Q206,207 N-FET Q208 TRANSISTOR	2SC2668 2SK246 2SK117 2SK246 2SC2603	D203 D204 D401-404 D405 D501,502	VARI-CAP DIODE ZENER DIODE DIODE ZENER DIODE VARI-CAP DIODE	SVC321SP-AS RD4.7ESB 1SS252 RD7.5ESB SVC321C2	

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.	Mark No.
D503	DIODE	1SS252	C29	CERAMIC CAPACITOR	CKDYX103M25	C223
D504	ZENER DIODE	RD5.1ESB	C31,32	CERAMIC CAPACITOR	CCDSH030C50	C224, ¹
D701-710	DIODE	S5566	C33	CERAMIC CAPACITOR	CKDYX103M25	C226
D711,712	ZENER DIODE	RD12ESB	C34-36	CERAMIC CAPACITOR	CCDCH030C50	C227-
D713,714	ZENER DIODE	HZS9A3L	C37,38	CERAMIC CAPACITOR	CCDCH101J50	C230
D715	DIODE	1SS252	C39	CERAMIC CAPACITOR	CKDYX473M25	C231
D716	ZENER DIODE	HZS6C2L	C41	CERAMIC CAPACITOR	CCDCH030C50	C232
D717	DIODE	1SS252	C42	CERAMIC CAPACITOR	CKDYX103M25	C233
D718	ZENER DIODE	RD5.1ESB1	C43	CERAMIC CAPACITOR	CCDSH330J50	C234
D719	ZENER DIODE	HZS9A3L	C44	CERAMIC CAPACITOR	CCDSH120J50	C235
D720	DIODE	1SS252	C45	CERAMIC CAPACITOR	CCDCH010C50	C236
D721	ZENER DIODE	RD10ESB	C46	CERAMIC CAPACITOR	CCDTH080D50	C237
D722	ZENER DIODE	RD2.2ESB	C47	CERAMIC CAPACITOR	CCDCH330J50	C238
D801-810	DIODE	1SS252	C48	CERAMIC CAPACITOR	CCDCH150J50	C239
COILS, FILTERS						
L1-3	AXIAL INDUCTOR	LAU010K	C54	CERAMIC CAPACITOR	CKDYB102K50	C308
L5	COIL	ATC-244	C59	CERAMIC CAPACITOR	CKDYX103M25	C309
L6	AXIAL INDUCTOR	LAU010K	C64	CERAMIC CAPACITOR	CKDYB102K50	C305
L11	COIL	ATC-077	C65,66	CERAMIC CAPACITOR	CKDYX103M25	C306
L12-14	AXIAL INDUCTOR	LAU010K	C67	CERAMIC CAPACITOR	CKDYB102K50	C307
L15	COIL	ATH-093	C69	CERAMIC CAPACITOR	CKDYX103M25	C308
L16-38	AXIAL INDUCTOR	LAU010K	C73-76	CERAMIC CAPACITOR	CKDYB102K50	C309
L101-103	AXIAL INDUCTOR	LAU220K	C78	CERAMIC CAPACITOR	CKDYX473M25	C310
L104	AXIAL INDUCTOR	LAU100K	C79-83	CERAMIC CAPACITOR	CKDYB102K50	C311
L201-203	AXIAL INDUCTOR	LAU220K	C84	CERAMIC CAPACITOR	CKDYX473M25	C312
L205,206	AXIAL INDUCTOR	LAU221K	C86,87	CERAMIC CAPACITOR	CKDYB102K50	C313
L207,401	AXIAL INDUCTOR	LAU010K	C88	CERAMIC CAPACITOR	CKDYX473M25	C314
L501	AXIAL INDUCTOR	LAU470K	C89,90	CERAMIC CAPACITOR	CKDYB102K50	C315
L502	IF TRANSFORMER	ATB-073	C101-107	CERAMIC CAPACITOR	CKDYX473M25	C316, ¹
L601	COIL	ATM1003	C108	CERAMIC CAPACITOR	CKDYX103M25	C318
L602-604	AXIAL INDUCTOR	LAU010K	C109-112	CERAMIC CAPACITOR	CKDYX473M25	C319
L801	AXIAL INDUCTOR	LAU220K	C114-117	CERAMIC CAPACITOR	CKDYX473M25	C320
L802	AXIAL INDUCTOR	LAU010K	C118-120	CERAMIC CAPACITOR	CKCYF103Z50	C321
F101-104	CERAMIC FILTER	ATF1080	C121	CERAMIC CAPACITOR	CKDYX473M25	C322
F105,106	CERAMIC FILTER	ATF1079	C122	ELECT. CAPACITOR	CEAS010M50	C323
F501	CERAMIC FILTER	ATF1077	C125	CERAMIC CAPACITOR	CKDYX103M25	C324
F502	CERAMIC FILTER	ATF1004	C127	CERAMIC CAPACITOR	CKDYX473M25	C325
T1	COIL	ATC-204	C128	ELECT. CAPACITOR	CEAS010M50	C326
T2	RF TRANSFORMER	ATC-257	C129	CERAMIC CAPACITOR	CKDYX473M25	C327
T3	IF TRANSFORMER	ATE-066	C131	CERAMIC CAPACITOR	CKDYX473M25	C328
T4	RF TRANSFORMER	ATC-218	C201,202	CERAMIC CAPACITOR	CKDYX473M25	C329
T101-104	IF TRANSFORMER	ATE-063	C203	ELECT. CAPACITOR	CEEA102M16	C330
T201	IF TRANSFORMER	ATE-068	C204	CERAMIC CAPACITOR	CKDYX473M25	C331
T204	IF TRANSFORMER	ATE1010	C205	ELECT. CAPACITOR	CEAS010M50	C332
T501	COIL	ATB-087	C206	CERAMIC CAPACITOR	CKCYF223Z50	C333
T502	IF TRANSFORMER	ATB1002	C207	ELECT. CAPACITOR	CEAS010M50	C334
			C208	CERAMIC CAPACITOR	CKCYF223Z50	C335-
			C209	ELECT. CAPACITOR	CEAS100M50	C339, ¹
			C210,211	CERAMIC CAPACITOR	CCCSL181J50	C341-
C1-4	CERAMIC CAPACITOR	CKDYX103M25	C345, ¹			
C5-15	CERAMIC CAPACITOR	CKDYB102K50	C345, ¹			
C16	CERAMIC CAPACITOR	CKDYX473M25	C347, ¹			
C17,18	CERAMIC CAPACITOR	CKDYB102K50	C401			
C20,21	CERAMIC CAPACITOR	CCDCH150J50	C402			
C22	CERAMIC CAPACITOR	CCDSH030C50	C403			
C23	CERAMIC CAPACITOR	CCDCH050C50	C405			
C24,25	CERAMIC CAPACITOR	CKDYX103M25	C406			
C26	CERAMIC CAPACITOR	CKDYX473M25	C407			
C28	CERAMIC CAPACITOR	CCDCH030C50	C408			
C217	ELECT. CAPACITOR	CEAS010M50	C409			
C218	CERAMIC CAPACITOR	CCCCH150J50	C410			
C219	CERAMIC CAPACITOR	CCCCH180J50	C410			
C220,221	CERAMIC CAPACITOR	CCCCH101J50	C410			
C222	ELECT. CAPACITOR	CEANP100M35	C410			

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.	Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
D503	DIODE	ISS252	C29	CERAMIC CAPACITOR	CKDYX103M25	C223	CERAMIC CAPACITOR	CKDYX103M25	C411	POLYESTER CAPACITOR	CQMXA103J100
D504	ZENER DIODE	RD5.1ESB	C31,32	CERAMIC CAPACITOR	CCDSH030C50	C224,225	CERAMIC CAPACITOR	CKDYX473M25	C412	ELECTROLYTIC CAPACIT	CEANLR47M50
D701-710	DIODE	S5566	C33	CERAMIC CAPACITOR	CKDYX103M25	C226	ELECT. CAPACITOR	CEAS101M25	C413	ELECT. CAPACITOR	CEAS2R2M50
D711,712	ZENER DIODE	RD12ESB	C34-36	CERAMIC CAPACITOR	CCDCH030C50	C227-229	CERAMIC CAPACITOR	CKDYX473M25	C420	CERAMIC CAPACITOR	CKDYF473Z50
D713,714	ZENER DIODE	HZS9A3L	C37,38	CERAMIC CAPACITOR	CCDCH101J50	C230	CERAMIC CAPACITOR	CCCCH680J50	C501	CERAMIC CAPACITOR	CKDYX223M25
D715	DIODE	ISS252	C39	CERAMIC CAPACITOR	CKDYX473M25	C231	CERAMIC CAPACITOR	CCCCH220J50	C502	CERAMIC CAPACITOR	CCDUJ100D50
D716	ZENER DIODE	HZS6C2L	C41	CERAMIC CAPACITOR	CCDCH030C50	C232	ELECT. CAPACITOR	CEAS010M50	C503	CERAMIC CAPACITOR	CKDYX103M25
D717	DIODE	ISS252	C42	CERAMIC CAPACITOR	CKDYX103M25	C233	ELECT. CAPACITOR	CEANP100M35	C504	PL.STYRENE CAPACITOR	CQSA471J50
D718	ZENER DIODE	RD5.1ESB1	C43	CERAMIC CAPACITOR	CCDSH330J50	C234	ELECT. CAPACITOR	CEAS470M25	C505,506	CERAMIC CAPACITOR	CKDYX223M25
D719	ZENER DIODE	HZS9A3L	C44	CERAMIC CAPACITOR	CCDSH120J50	C235	ELECT. CAPACITOR	CEAS471M10	C507	ELECT. CAPACITOR	CEAS100M50
D720	DIODE	ISS252	C45	CERAMIC CAPACITOR	CCDCH010C50	C236	ELECT. CAPACITOR	CEAS470M25	C508	CERAMIC CAPACITOR	CKPUYF223Z25
D721	ZENER DIODE	RD10ESB	C46	CERAMIC CAPACITOR	CCDTH080D50	C237	ELECT. CAPACITOR	CEAS010M50	C509	CERAMIC CAPACITOR	CKPUYF103Z25
D722	ZENER DIODE	RD2.2ESB	C47	CERAMIC CAPACITOR	CCDCH330J50	C238	CERAMIC CAPACITOR	CKDYX473M25	C510	CERAMIC CAPACITOR	CKDYX103M25
D801-810	DIODE	ISS252	C48	CERAMIC CAPACITOR	CCDCH150J50	C239	CERAMIC CAPACITOR	CKCYX103M25	C511	CERAMIC CAPACITOR	CCDSL101J50
COILS, FILTERS											
L1-3	AXIAL INDUCTOR	LAU010K	C54	CERAMIC CAPACITOR	CKDYB102K50	C240,241	CERAMIC CAPACITOR	CKCYX473M25	C512,513	ELECT. CAPACITOR	CEAS4R7M50
L5	COIL	ATC-244	C59	CERAMIC CAPACITOR	CKDYX103M25	C242	ELECT. CAPACITOR	CEAS220M50	C514	MYLAR FILM CAPACITOR	CQMA103J50
L6	AXIAL INDUCTOR	LAU010K	C64	CERAMIC CAPACITOR	CKDYB102K50	C301	CERAMIC CAPACITOR	CKCYX473M25	C515	CERAMIC CAPACITOR	CKDYX223M25
L11	COIL	ATC-077	C65,66	CERAMIC CAPACITOR	CKDYX103M25	C303,304	ELECT. CAPACITOR	CEEANP100M25	C516	ELECT. CAPACITOR	CEAS330M35
L12-14	AXIAL INDUCTOR	LAU010K	C67	CERAMIC CAPACITOR	CKDYB102K50	C305	ELECT. CAPACITOR	CEANP100M35	C517	ELECT. CAPACITOR	CEAS100M50
L15	COIL	ATH-093	C69	CERAMIC CAPACITOR	CKDYX103M25	C306	ELECT. CAPACITOR	CEAS4R7M50	C518	MYLAR FILM CAPACITOR	CQMA393J50
L16-38	AXIAL INDUCTOR	LAU010K	C73-76	CERAMIC CAPACITOR	CKDYB102K50	C308	ELECT. CAPACITOR	CEAS1R5M50	C519	ELECT. CAPACITOR	CEAS010M50
L101-103	AXIAL INDUCTOR	LAU220K	C78	CERAMIC CAPACITOR	CKDYX473M25	C309	ELECT. CAPACITOR	CEAS010M50	C520	CERAMIC CAPACITOR	CKDYX223M25
L104	AXIAL INDUCTOR	LAU100K	C79-83	CERAMIC CAPACITOR	CKDYB102K50	C310	ELECT. CAPACITOR	CEASR68M50	C521	ELECT. CAPACITOR	CEAS330M35
L201-203	AXIAL INDUCTOR	LAU220K	C84	CERAMIC CAPACITOR	CKDYX473M25	C311	ELECT. CAPACITOR	CEASR47M50	C522	CERAMIC CAPACITOR	CKDYB102K50
L205,206	AXIAL INDUCTOR	LAU221K	C86,87	CERAMIC CAPACITOR	CKDYB102K50	C312	ELECT. CAPACITOR	CEASR22M50	C523	CERAMIC CAPACITOR	CKDYX223M25
L207,401	AXIAL INDUCTOR	LAU10K	C88	CERAMIC CAPACITOR	CKDYX473M25	C313	ELECT. CAPACITOR	CEASR15M50	C524	CERAMIC CAPACITOR	CKPUYB102K50
L501	AXIAL INDUCTOR	LAU470K	C89,90	CERAMIC CAPACITOR	CKDYB102K50	C314	ELECT. CAPACITOR	CEEAA471M25	C525	CERAMIC CAPACITOR	CKPUYF223Z25
L502	IF TRANSFORMER	ATB-073	C101-107	CERAMIC CAPACITOR	CKDYX473M25	C315	CERAMIC CAPACITOR	CKCYX473M25	C526	CERAMIC CAPACITOR	CKPUYF103Z25
L601	COIL	ATM1003	C101	CERAMIC CAPACITOR	CKDYX103M25	C316,317	ELECT. CAPACITOR	CEEANP100M25	C527	ELECT. CAPACITOR	CEAS330M35
L602-604	AXIAL INDUCTOR	LAU010K	C109-112	CERAMIC CAPACITOR	CKDYX473M25	C318	MYLAR FILM CAPACITOR	CQMA472K50	C528	CERAMIC CAPACITOR	CKPUYF103Z25
L801	AXIAL INDUCTOR	LAU220K	C114-117	CERAMIC CAPACITOR	CKDYX473M25	C319	MYLAR FILM CAPACITOR	CQMA821K50	C529	ELECT. CAPACITOR	CEAS0R1M50
L802	AXIAL INDUCTOR	LAU10K	C118-120	CERAMIC CAPACITOR	CKCYF103Z50	C320	MYLAR FILM CAPACITOR	CQMA822K50	C531,532	CERAMIC CAPACITOR	CKDYX103M25
F101-104	CERAMIC FILTER	ATF1080	C121	CERAMIC CAPACITOR	CKDYX473M25	C321	MYLAR FILM CAPACITOR	CQMA152K50	C601,602	PL.STYRENE CAPACITOR	CQSA152J160
F105,106	CERAMIC FILTER	ATF1079	C122	ELECT. CAPACITOR	CEAS010M50	C322	MYLAR FILM CAPACITOR	CQMA123K50	C603	ELECT. CAPACITOR	CEEA471M25
F501	CERAMIC FILTER	ATF1077	C125	CERAMIC CAPACITOR	CKDYX103M25	C323	MYLAR FILM CAPACITOR	CQMA272K50	C604	ELECT. CAPACITOR	CEAS470M25
F502	CERAMIC FILTER	ATF1004	C127	CERAMIC CAPACITOR	CKDYX473M25	C324	MYLAR FILM CAPACITOR	CQMA223K50	C605	CERAMIC CAPACITOR	CKCYX473M25
T1	COIL	ATC-204	C128	ELECT. CAPACITOR	CEAS010M50	C325	MYLAR FILM CAPACITOR	CQMA472K50	C606	ELECT. CAPACITOR	CEEA102M16
T2	RF TRANSFORMER	ATC-257	C129	CERAMIC CAPACITOR	CKDYX473M25	C326	MYLAR FILM CAPACITOR	CQMA333K50	C607	ELECT. CAPACITOR	CEAS1R5M50
T3	IF TRANSFORMER	ATE-066	C131	CERAMIC CAPACITOR	CKDYX473M25	C327	MYLAR FILM CAPACITOR	CQMA103K50	C608	ELECT. CAPACITOR	CEAS100M50
T4	RF TRANSFORMER	ATC-218	C201,202	CERAMIC CAPACITOR	CKDYX473M25	C328	ELECT. CAPACITOR	CEAS220M50	C609	CKA (390P/50V)	ACG-023
T101-104	IF TRANSFORMER	ATE-063	C203	ELECT. CAPACITOR	CEEAA102M16	C329	MYLAR FILM CAPACITOR	CQMA563K50	C610	ELECT. CAPACITOR	CEAS6R8M50
T201	IF TRANSFORMER	ATE-068	C204	CERAMIC CAPACITOR	CKDYX473M25	C330	MYLAR FILM CAPACITOR	CQMA104K50	C611	ELECT. CAPACITOR	CEAS100M50
T204	IF TRANSFORMER	ATE1010	C205	ELECT. CAPACITOR	CEAS010M50	C331	MYLAR FILM CAPACITOR	CQMA273K50	C612	PL.PROPYTENE CAPACIT	CQPA682G100
T501	COIL	ATB-087	C206	CERAMIC CAPACITOR	CKCYF223Z50	C332	MYLAR FILM CAPACITOR	CQMA823K50	C613	ELECT. CAPACITOR	CEAS100M50
T502	IF TRANSFORMER	ATB1002	C207	ELECT. CAPACITOR	CEAS010M50	C333	MYLAR FILM CAPACITOR	CQMA153K50	C614	ELECT. CAPACITOR	CEAS330M35
CAPACITORS											
C1-4	CERAMIC CAPACITOR	CKDYX103M25	C210,211	CERAMIC CAPACITOR	CCCSL181J50	C334	MYLAR FILM CAPACITOR	CQMA563K50	C615,616	ELECT. CAPACITOR	CEEA470M25
C5-15	CERAMIC CAPACITOR	CKDYB102K50	C212	ELECT. CAPACITOR	CEAS4R7M50	C335-338	PL.STYRENE CAPACITOR	CQSA103J50	C617,618	POLYESTER CAPACITOR	CQMXA682J100
C16	CERAMIC CAPACITOR	CKDYX473M25	C213	CERAMIC CAPACITOR	CKDYX473M16	C339,340	CERAMIC CAPACITOR	CKCYX473M25	C620,621	CERAMIC CAPACITOR	CKDYB152K50
C17,18	CERAMIC CAPACITOR	CKDYB102K50	C214	ELECT. CAPACITOR	CEEA471M25	C341-344	PL.STYRENE CAPACITOR	CQSA103J50	C701	ELECT. CAPACITOR	CEAS470M50
C20,21	CERAMIC CAPACITOR	CCDCH150J50	C215	ELECT. CAPACITOR	CEAS010M50	C345,346	POLYESTER CAPACITOR	CQMXA103J100	C702	ELECT. CAPACITOR	CEHAQ221M63
C22	CERAMIC CAPACITOR	CCDSH030C50	C216	ELECT. CAPACITOR	CEAS220M50	C347,348	CERAMIC CAPACITOR	CKCYX473M25	C703	ELECT. CAPACITOR	CEHAQ221M50
C23	CERAMIC CAPACITOR	CCDCH050C50	C217	ELECT. CAPACITOR	CEAS010M50	C401	CERAMIC CAPACITOR	CKDYX473M16	C704	ELECT. CAPACITOR	CEAS471M50
C24,25	CERAMIC CAPACITOR	CKDYX103M25	C218	CERAMIC CAPACITOR	CCCH150J50	C402	CERAMIC CAPACITOR	CCDCH150J50	C705	ELECT. CAPACITOR	CEHAQ332M35
C26	CERAMIC CAPACITOR	CKDYX473M25	C219	CERAMIC CAPACITOR	CCCH180J50	C403	CERAMIC CAPACITOR	CKDYX103M25	C706	CERAMIC CAPACITOR	CKCYX473M25
C28	CERAMIC CAPACITOR	CCDCH									

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
C714	ELECT. CAPACITOR	CEHAQ101M25	R713	METAL OXIDE RESISTOR	RS3LMF680J
C715	ELECT. CAPACITOR	CEAS101M25	R714	CARBON FILM RESISTOR	RD1/2PM271J
C716	CERAMIC CAPACITOR	CCCCH101J50	R716-719	CARBON FILM RESISTOR	RD1/4PM010J
C717	CKA (0.01/AC250V)	ACG1005	R724	METAL OXIDE RESISTOR	RS3LMF680J
C719	ELECT. CAPACITOR	CEAS101M25	R807	RESISTOR ARRAY (22K)	RA6T223J
C801	CERAMIC CAPACITOR	CCCSL101J50	R820	CARBON FILM RESISTOR	RD1/4PM101J
C802,803	CERAMIC CAPACITOR	CKCYF103Z50	R826	RESISTOR ARRAY(22K)	RA8T223J
C804	CERAMIC CAPACITOR	CKDYYX473M25		Other resistors	RD1/8PM□□□J
C805	ELECT. CAPACITOR	CEAS100M50			
C806	CERAMIC CAPACITOR	CCCSL101J50			
C807	CERAMIC CAPACITOR	CKCYX223M25			
C808	CAPACITOR(0.047/5.5)	ACH1135			
C809	ELECT. CAPACITOR	CEAS470M25			
C810	CERAMIC CAPACITOR	CKCYX223M25			
C812	CERAMIC CAPACITOR	CKDYYX473M25			
C813	CERAMIC CAPACITOR	CCDSL101J50			
RESISTORS					
VR101	VR(47K)	ACP1045	TC1	CERAMIC TRIMMER	ACM-018
VR201	VR(4.7K)	ACP1042	TC2	CERAMIC TRIMMER	ACM-018
VR202	VR(10K)	ACP1043	TC3	CERAMIC TRIMMER	ACM-018
VR203	VR(22K)	ACP1044	TC501	CERAMIC TRIMMER	ACM-019
VR204	VR(10K)	ACP1043	TC502	CERAMIC TRIMMER	ACM-019
VR205	VR(220)	ACP1038	TH101	THERMISTOR	TH103-2
VR206,207	VR(22K)	ACP1044	TH102	THERMISTOR	TH102-2
VR208-210	VR(10K)	ACP1043	TH201	THERMISTOR	TH103-2
VR301	VR(47K)	ACP1045	X401	CRYSTAL RESO.(7.2M)	ASS1005
VR601	VR(2.2K)	ACP1041	X501	CERAMIC RESO.(450K)	ATF1027
VR602	VR(22K)	ACP1044	X502	CERAMIC RESO.(450K)	ATF1027
R4	CARBON FILM RESISTER	RD1/4PM301J	X801	CERAMIC RESO.(7.7M)	ASS1055
R10	CARBON FILM RESISTER	RD1/4PM301J	CN1	CONNECTOR(15P)	KPE15
R23	CARBON FILM RESISTER	RD1/8PM4R7J	CN2	CONNECTOR(12P)	KPE12
R24	CARBON FILM RESISTOR	RD1/4PM151J	JACK		AKN-207
R32	CARBON FILM RESISTOR	RD1/4PM151J		PIN JACK(2P)	AKB1039
R102	CARBON FILM RESISTOR	RD1/4PM151J		SCREW (STEEL)	ABA1009
R106	CARBON FILM RESISTOR	RD1/4PM151J		SOCKET	AKX1034
R113	CARBON FILM RESISTOR	RD1/4PM151J		TERMINAL 2-P	AKE-060
R129	CARBON FILM RESISTOR	RD1/4PM151J			
R135	CARBON FILM RESISTOR	RD1/4PM151J			
R214-217	CARBON FILM RESISTOR	RDR1/4PM223J			
R227	CARBON FILM RESISTOR	RDR1/4PM331J			
R228-230	CARBON FILM RESISTOR	RDR1/4PM□□□J			
R233-236	CARBON FILM RESISTOR	RDR1/4PM□□□J			
R303,304	CARBON FILM RESISTOR	RDR1/4PM103J			
R305,306	METALFILM RESISTER	RN1/4PC7870F			
R307,308	CARBON FILM RESISTOR	RDR1/4PM511J			
R309,310	METALFILM RESISTER	RN1/4PC1151F			
R311,312	CARBON FILM RESISTOR	RDR1/4PM271J			
R313,314	METALFILM RESISTER	RN1/4PC1021F			
R315-326	CARBON FILM RESISTOR	RDR1/4PM□□□J			
R514	CARBON FILM RESISTOR	RD1/4PM201J			
R601-606	CARBON FILM RESISTOR	RDR1/4PM□□□J			
R608	METALFILM RESISTER	RN1/4PC5601F			
R612-615	CARBON FILM RESISTOR	RDR1/4PM□□□J			
R701	METAL OXIDE RESISTOR	RS3LMF471J			
R702	CARBON FILM RESISTOR	RD1/2PM471J			
R703	CARBON FILM RESISTOR	RD1/4PM681J			
R712	CARBON FILM RESISTOR	RD1/4PM222J			
OTHERS					
V901	FL TUBE				AAV1121

4. ADJUSTMENTS

PREPARATIONS

- To set the test mode, short TP801 and TP802 (GND) then release the short.
- Set TC1 – TC3 and VR202 to their mechanical centers.

FM tuner adjustment

- Connect as shown in Fig.1
- Set the function to FM.

Step No.	Adjustment	FM SG (1 kHz ± 75 kHz dev).			F-701 reception frequency display	Adjustment	
		Frequency(MHz)	Modulation	Level(dB μ V) [Load]		Location	Specification
1	Front-end VT adjustment	NO INPUT SIGNAL			108MHz NORMAL or SUPER NARROW	L11	Adjust so that the voltage between TP1 and ground is 21.0 ± 0.1 V.
2					87.5MHz NORMAL or SUPER NARROW	–	Confirm that the voltage between TP1 and ground is 7.6 ± 0.5 V
3	Front-end sensitivity-up adjustment	90.0	MONO	Weak input	90.0 MHz NORMAL	L5, T1, T2	Adjust for the maximum voltage between TP210 and ground. Repeat these two steps until both specifications are satisfied. (*1)
4		106.0	MONO	Weak input	106.0 MHz NORMAL	TC1 – TC3	
5	IF stage sensitivity-up adjustment	98.0	MONO	Weak input	98.0 MHz NARROW	T3, T101 – T103	Adjust so that voltage between TP210 and ground become maximum.
6					98.0MHz SUPER NARROW	T104	
7	Detector T meter adjustment (1)	98.0	MONO	54	98.0 MHz NORMAL	T201 – B	After setting the voltage between TP201 and TP202 to 0 ± 100 mV, check that the modulated signals are output from the output terminal.
8	Detector T meter adjustment (2)					T204	After setting the voltage between TP204 and TP205 to 0 ± 100 mV, check that the modulated signals are output from the output terminal.
9	Monaural distortion adjustment (NORMAL)	98.0	MONO	54	98.0MHz NORMAL	T201 – A VR201 (T201 – B)	Short TP204 and TP208, adjust so as to minimize distortion. If this cannot be achieved, turn T201 – B, voltage between TP201 and TP202 within 0 ± 100 mV, then repeat the above adjustment.
10	Mono third-harmonic distortion adjustment (NORMAL)	98.0	MONO	54	98.0MHz NORMAL	VR208	Adjust VR208 so that AC voltage at TP209 becomes minimum (less than 80 mV).
11						T204	TP204, TP208 open : Adjust T204 so that the distortion becomes minimum.
12						VR209	Adjust VR209 so that the distortion (third-harmonic) becomes minimum.
13	Repeat steps 11 and 12 above so that the distortion becomes minimum (less than 0.2%).						
14	Mono third-harmonic distortion adjustment (SUPER NARROW)	98.0	MONO	54	98.0MHz SUPER NARROW	VR210	Adjust VR210 so that the distortion becomes minimum (less than 0.4%).
15	SUB balance adjustment	98.0	MONO	54	98.0MHz NORMAL	VR205	Adjust to minimize the output at TP203 (AC voltage).

Step No.	Adjustment	FM SG (1 kHz ± 75 kHz dev).			F-701 reception frequency display	Adjustment	
		Frequency(MHz)	Modulation	Level(dB μ V) [Load]		Location	Specification
16	VCO adjustment	108	OFF	54	108.0 MHz NORMAL or SUPER NARROW	VR601	Adjust so that the output at TP601 is 38 kHz±100 Hz
17	Pilot cancel adjustment	107(*2)	PILOT ONLY	54	107MHz NORMAL	VR602	Adjust so as to minimize the output terminal AC voltage.
18	Stereo distortion adjustment (NORMAL)	89(*2)	L - ONLY	60	89 MHz NORMAL	VR203	Adjust so as to minimize distortion. If this cannot be achieved, try turning T3, T101, T102 and T103 within ± 90° .
19	Stereo distortion adjustment (SUPER NARROW)	89.0*(2)	L - ONLY	60	89.0 MHz SUPER NARROW	VR204	Adjust so as to minimize distortion. If this cannot be achieved, try turning T104 within ± 90° (check step 18 after this).
20	Separation adjustment	89(*2)	R - ONLY	60	89 MHz NORMAL	VR206	Adjust for the maximum R → L separation .
21			L - ONLY			VR207	Adjust for the maximum L → R separation.
22	Noise reduction separaton adjustment	89 (*2)	STEREO	60	89MHz NORMAL MPX NR ON	VR301	Adjust VR301 so that the output level of the output terminal ranges from +1 dB to 1.5 dB when the MPX NR is ON compared with when the MPX NR is OFF.
23	S meter adjustment	89	MONO	50	89.0MHz NORMAL	VR202	Adjust the indication of the S meter to 50 dB μ .
24				75		VR101	Adjust the indication of the S meter to 75 dB μ .

(*1) The adjustments for the HEWZI model end with Step 4.

(*2) Stereo modulation : Main 1 kHz L + R ± 68.25 kHz

Pilot 19 kHz ± 6.75 kHz

AM tuner adjustment

- Connect as shown in Fig. 2.
- Set TC501 and TC502 to their mechanical centers.
- Step 1 and 2 should be carried out in the SUPER NARROW or NORMAL mode, and step 3 to 5 in the SUPER NARROW mode.

Step No.	Adjustment	AM SG (400kHz 30% modulation)		F-701 reception frequency display	Adjustttment	
		Frequency (kHz)	Level(dB μ V/m)		Location	Specification
1	Front-end VT adjustment	NO INPUT SIGNAL		531 kHz	L502	Adjust so that the voltage between TP1 and ground is 2.0±0.2V.
2				1602 kHz	TC502	Adjust so that the voltage between TP1 and ground is 16.0 ±0.2V.
3	Front-end sensitivity-up adjustment	603	Weak input	603 kHz	T501	Adjust so as to maximize the voltage between TP501 and ground.
4		1395	Weak input	1395 kHz	TC501	
5	Repeat steps 3 and 4 until optimum adjustment is obtained.					

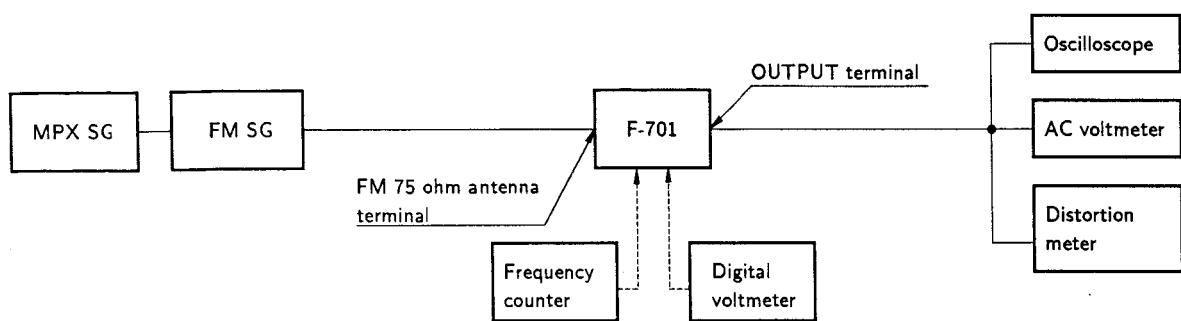


Fig. 1 FM Tuner Connection

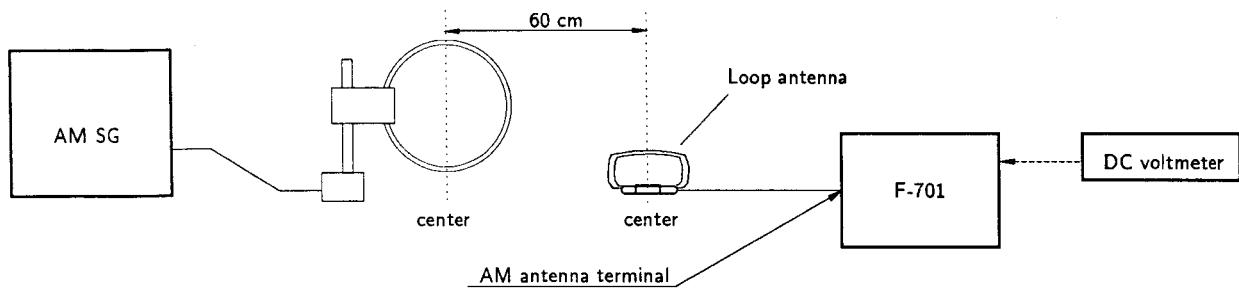


Fig. 2 AM Tuner Connection

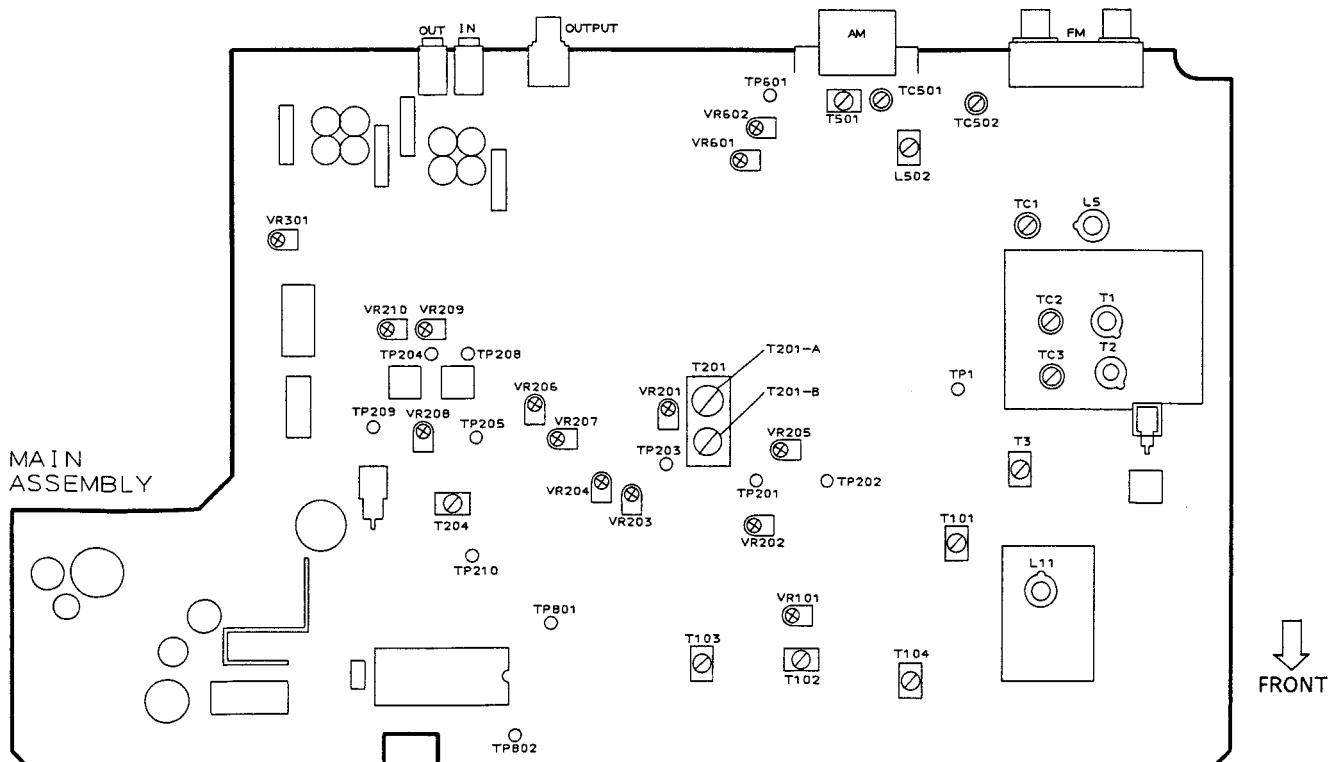


Fig. 3 Adjusting point

4. REGLAGES

PREPARATIFS

- Pour régler le mode d'essai, couper le circuit TP801 et TP802 (Masse), puis le réouvrir.
- Régler TC1 - TC3 et VR202 sur leur centre mécanique.

Réglage du tuner FM

- Raccorder comme illustré à la figure 1.
- Regler la fonction sur FM.

Ordre	Réglage	FM SG (1 kHz ± 75 kHz dev.).			Affichage de fréquence de réception F-701	Réglage	
		Fréquence (MHz)	Modulation	Niveau (dB μ V) [Charge]		Emplacement	Spécification
1	Réglage VT d'entrée	ABSENCE DE SIGNAL D'ENTREE			108 MHz NORMAL ou SUPER NARROW	L11	Régler afin que la tension entre TP1 et la masse soit de 21,0 ± 0,1V.
2					87,5 MHz NORMAL ou SUPER NARROW	-	Contrôler si la tension entre TP1 et la masse est bien de 7,6V ± 0,5V.
3	Réglage d'augmentation de sensibilité d'entrée	90,0	MONO	Entrée faible	90,0 MHz NORMAL	L5, T1, T2	Régler pour obtenir la tension maximale entre TP210 et la masse. Répéter ces deux étapes jusqu'à ce que les deux spécifications soient atteintes (*1).
4		106,0	MONO	Entrée faible	106,0 MHz NORMAL	TC1 - TC3	
5	Réglage d'augmentation de sensibilité d'étage if	98,0	MONO	Entrée faible	98,0 MHz NARROW	T3, T101 - T103	Régler afin que la tension entre TP210 et la masse soit maximale.
6					98,0 MHz SUPER NARROW	T104	
7	Réglage de compteur T de détection (1)	98,0	MONO	54	98,0 MHz NORMAL	T201 - B	Après avoir réglé la tension entre TP201 et TP202 à 0±100mV, vérifier si les signaux modulés sont sortis à la borne de sortie.
8						T204	
9	Réglage de la distorsion monophonique (NORMAL)	98,0	MONO	54	98,0 MHz NORMAL	T201 - A VR201 (T201 - B)	Court-circuiter TP204 et TP208 et régler de façon à minimiser la distorsion. Si cette valeur ne peut être obtenue, tourner T201-B, la tension entre TP201 et TP202 dans une plage de 0±100mV, puis répéter le réglage ci-dessus.
10	Réglage de la distorsion de la troisième harmonique mono (NORMAL)	98,0	MONO	54	98,0 MHz NORMAL	VR208	Régler VR208 pour que la tension CA du TP209 soit au minimum (moins de 80 mV).
11						T204	Ouverture TP204, TP208 : Régler T204 afin de réduire la distorsion au minimum.
12						VR209	Régler VR209 pour que la distorsion (troisième harmonique) soit réduite au minimum.
13	Répéter les étapes 11 et 12 ci-dessus afin de réduire la distorsion au minimum (moins de 0,2%).						
14	Réglage de la distorsion de la troisième harmonique mono (SUPER NARROW)	98,0	MONO	54	98,0 MHz SUPER NARROW	VR210	Régler VR210 pour que la distorsion soit réduite au minimum (moins de 0,4%).
15	Réglage d'équilibrage SUB	98,0	MONO	54	98,0 MHz NORMAL	VR205	Régler pour minimiser la sortie à TP203 (tension CA).

Ordre	Réglage	FM SG (1 kHz ± 75 kHz dev).			Affichage de fréquence de réception F-701	Réglage	
		Fréquence (MHz)	Modulation	Niveau (dB μ V) [Charge]		Emplacement	Spécification
16	Réglage VCO	108	OFF	54	108.0MHz NORMAL ou SUPER NARROW	VR601	Régler afin que la sortie à TP601 soit de 38 kHz ±100Hz.
17	Réglage d'annulation pilote	107 (*2)	PILOTE SEULEMENT	54	107 MHz NORMAL	VR602	Régler afin de minimiser la tension CA de la borne de sortie.
18	Réglage de distorsion stéréo (NORMAL)	89 (*2)	L - ONLY	60	89 MHz NORMAL	VR203	Régular afin de minimiser la distorsion. Si cette valeur ne peut être obtenue, tourner T3, T101, T102 et T103 dans une plage de ±90°.
19	Réglage de distorsion stéréo (SUPER NARROW)	89,0 (*2)	L - ONLY	60	89.0 MHz SUPER NARROW	VR204	Régular afin de minimiser la distorsion. Si cette valeur ne peut être obtenue, tourner T104 dans une plage de ±90°. (Vérifier l'étape 18 après)
20	Réglage de séparation	89 (*2)	R - ONLY	60	89 MHz NORMAL	VR206	Régler pour obtenir une séparation D→G maximale.
21			L - ONLY			VR207	Régler pour obtenir une séparation G→D maximale.
22	Réglage de séparation de réduction de bruit	89 (*2)	STEREO	60	89 MHz NORMAL MPX NR ON	VR301	Régler VR301 pour que le niveau de sortie de la borne de sortie se situe entre +1dB et 1,5dB quand le filtre MPX NR est sur ON en comparaison à quand il est sur OFF.
23	Réglage de compteur S	89	MONO	50	89,0 MHz NORMAL	VR202	Régler l'indication du compteur S sur 50 dB μ .
24				75		VR101	Régler l'indication du compteur S sur 75 dB μ .

(*1) Les réglages du modèle HEWZI se terminent avec l'étape 4.

(*2) Modulation stéréo : Principale 1 kHz G + D ±68,25 kHz

Pilote 19 kHz ± 6,75 kHz

Réglage du tuner AM

- Raccorder comme illustré à la figure 2.
- Régler TC501 et TC502 sur leur centre mécanique.
- Les phases 1 et 2 doivent être exécutées en mode SUPER NARROW ou NORMAL et les phases 3 a 5 en mode SUPER NARROW.

Ordre	Réglage	AM SG (400 kHz 30% modulation)		Affichage de fréquence de réception F-701	Réglage	
		Fréquence(kHz)	Niveau(dB μ V/m)		Emplacement	Spécification
1	Réglage VT d'entrée	ABSENCE DE SIGNAL D'ENTREE		531 kHz	L502	Régler afin que la tension entre TP1 et la masse soit de 2,0 ±0,2V.
2				1602 kHz	TC502	Contrôler si la tension entre TP1 et la masse est bien de 16,0 ±0,2V.
3	Réglage d'augmentation de sensibilité d'entrée	603	Entrée faible	603 kHz	T501	Régler afin de maximiser la tension entre TP501 et la masse.
4		1395	Entrée faible	1395 kHz	TC501	
5	Répéter les étapes 3 et 4 jusqu'à l'obtention d'un réglage optimal.					

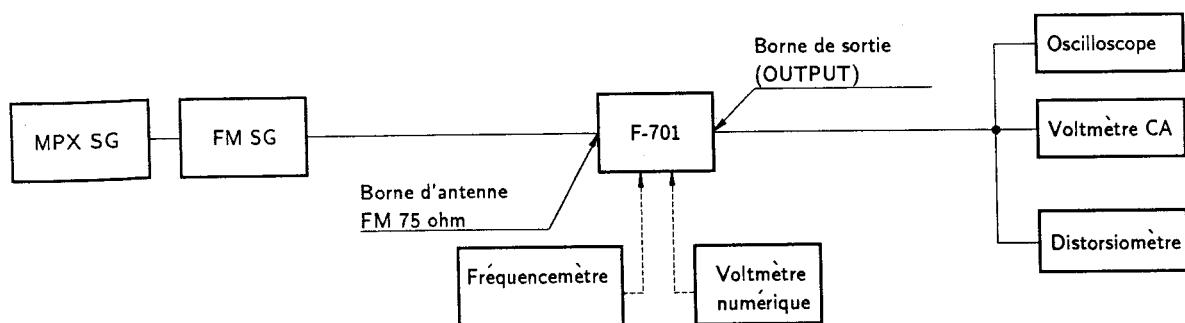


Fig. 1 Connexion du tuner FM

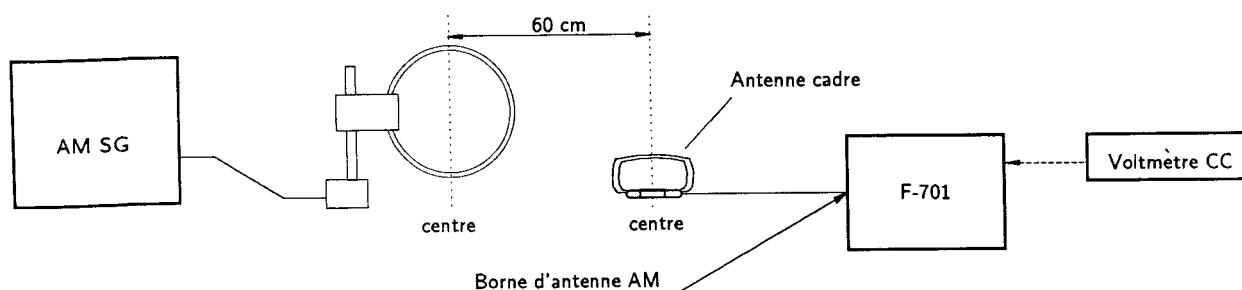


Fig. 2 Connexion du tuner AM

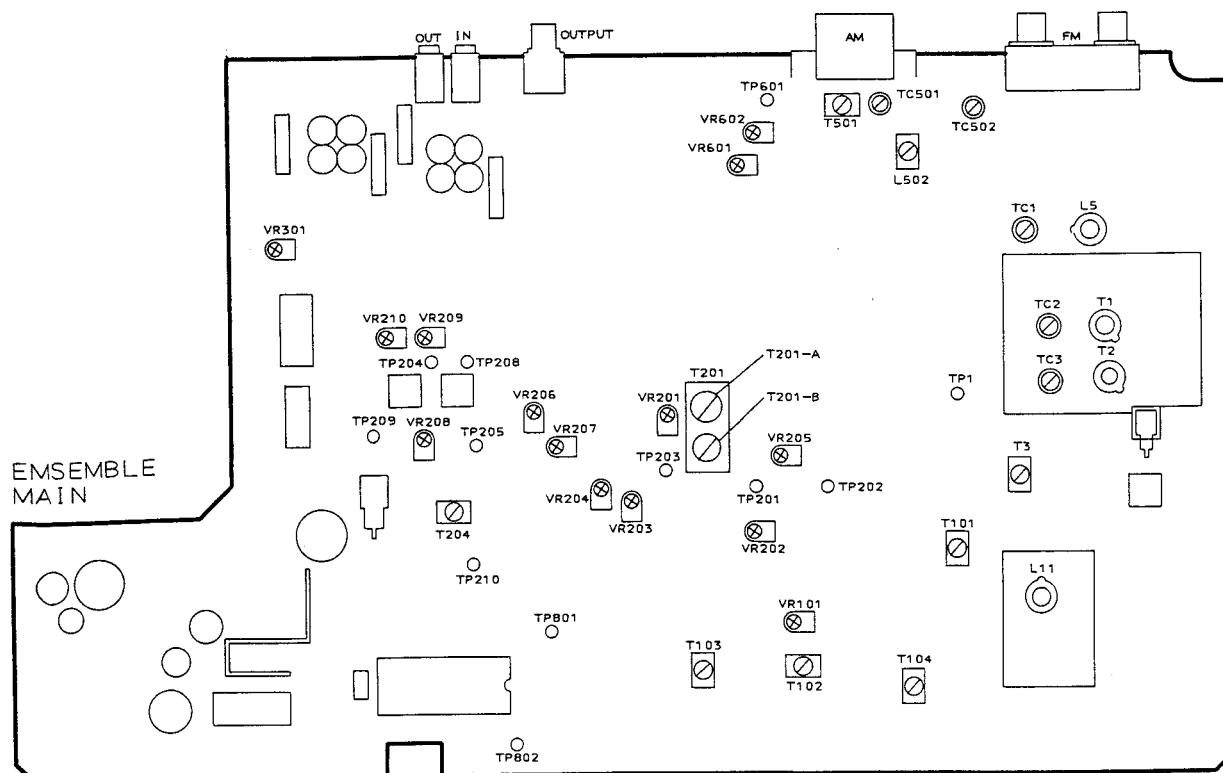


Fig. 3 Points de Réglage

4. AJUSTES

PREPARACIONES

- Para establecer el modo de prueba, cortocircuite TP801 y TP802 (masa) y después abra dicho cortocircuito.
- Coloque TC1 a TC3 y VR202 en sus centros mecánicos.

Ajuste del sintonizador de FM

- Conecte como lo indica la Fig. 1.
- Seleccione la función de FM.

Paso N°	Ajuste	FM SG (desv. 1±75kHz)			Indicador de frecuencia de recepción del F-701	Ajuste	
		Frecuencia (MHz)	Modulación	Nivel (dB μ V) [Carga]		Punto de ajuste	Especificación
1	Ajuste de VT de la sección de entrada	Ausencia de señal			108,0 MHz NORMAL o SUPER NARROW	L11	Ajuste de modo que la tensión entre TP1 y masa sea $21,0 \pm 0,1$ V.
2					87,5 MHz NORMAL o SUPER NARROW	—	Confirme que la tensión entre TP1 y masa sea $7,6 \pm 0,5$ V.
3	Ajuste de aumento de sensibilidad de la sección de entrada	90,0	MONO	Entrada débil	90,0 MHz NORMAL	L5, T1, T2	Ajuste de modo de obtener la máxima tensión entre TP210 y masa. Repita estos dos pasos hasta que ambas especificaciones sean satisfechas. (*1)
4		106,0	MONO	Entrada débil	106,0 MHz NORMAL	TC1 – TC3	
5	Ajuste de aumento de sensibilidad de la etapa de FI	98,0	MONO	Entrada débil	98,0 MHz NARROW	T3, T101 – T103	Ajuste de modo de obtener la máxima tensión entre TP210 y masa.
6					98,0MHz SUPER NARROW	T104	
7	Ajuste del medidor T de la detectora(1)	98,0	MONO	54	98,0 MHz NORMAL	T201 – B	Después de ajustar la tensión entre TP201 y TP202 a 0 ± 100 mV, confirme que las señales moduladas estén presentes en el terminal de salida.
8						T204	Después de ajustar la tensión entre TP204 y TP205 a 0 ± 100 mV, confirme que las señales moduladas estén presentes en el terminal de salida.
9	Ajuste de distorsión monoaural (NORMAL)	98,0	MONO	54	98,0 MHz NORMAL	T201 – A VR201 (T201 – B)	Cortocircuite TP204 y TP208 y ajuste de la forma que la distorsión se reduzca al mínimo. Si esto no fuera posible, gire T201 – B para ajuste la tensión entre TP201 y TP202 a 0 ± 100 mV, y luego repita el ajuste anterior.
10	Ajuste de la distorsión de la tercera armonica en el modo monoaural (NORMAL)	98,0	MONO	54	98,0 MHz NORMAL	VR208	Ajuste VR208 hasta que la tensión de CA en TP209 sea mínima(menos de 80mV).
11						T204	TP204 y TP208 abiertos; Ajuste TP204 de forma que la distorsión se reduzca al mínimo.
12						VR209	Ajuste VR209 de forma que la distorsión (tercera armonica) se reduzca al mínimo.
13	Repita los pasos 11 y 12 anteriores de forma que la distorsión se reduzca al mínimo (menos del 0,2%).						
14	Ajuste de la distorsión de la tercera armonica en el modo monoaural (SUPER NARROW)	98,0	MONO	54	98,0 MHz SUPER NARROW	VR210	Ajuste VR210 de forma que la distorsión se reduzca al mínimo (menos del 0,4%).
15	Ajuste de equilibrio secundario	98,0	MONO	54	98,0 MHz NORMAL	VR205	Ajuste de modo de minimizar la salida por TP203 (tensión de CA).

5. IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

5.1 PD5187A (IC801)

- Tuner Control μ-Com

● Pin Function

No.	Pin name	I/O	Function	Active
1	PMUT	O	Power source mute	H
2	10K/9K	I	AM step switcher, FM step switcher	H/L
3	ROT A	I	Rotary encoder input	H/L
4	ROT B	I		
5	FM SM	I	FMS meter input	-
6	AM SM	I	AMS meter input	-
7	NOISE/RST	I/O	Noise input/ reset output	-/L
8	STOP	I	Auto-stop input	L
9	MUTE	O	Mute output	H
10	MONO	O	Forced monaural output	H
11	FM+B/AM+B	O	FM+B output/ AM+B output	H/L
12	KEY IN φ	I	Key input	L
13	ATT2	O	RF ATT control	H/L
14	ATT2	O		H/L
15	AC IN	I	AC input	-
16	POWER IND	O	Power injector output (standby)	L
17	STEREO IN	I	Stereo input	L
18	NR	O	Noise reduction output	H
19	SSS	O	SSS output	H
20	S-MPX	O	S-MPX output	H
21	REM IN		Remote control input	H/L
22	CN VSS	-	GND	-
23	RESET	I	Reset input	L
24	Xin	I	Oscillator input	H/L
25	Xout	O	Oscillator output	H/L
26	VSS	-	GND	-

No.	Pin name	I/O	Function	Active
27	SELECT	I	model switching	L
28	KEYIN 1	I	Key input 1	L
29	KEYIN 2	I	Key input 2	L
30	KEYIN 3	I	Key input 3	L
31	KEYIN 4	I	Key input 4	L
32	KEYIN 5	I	Key input 5	L
33	KEYIN 6	I	Key input 6	L
34	KEYIN 7	I	Key input 7	L
35	S NARROW	O	Super narrow	L
26	NORMAL	O	Normal	L
27	FL AC	O	FL switch	L
38	POWER	O	Power output	L
39	AND A/B	O	Antenna AB switching	H/L
40	KEYOUT 4	O	Key output	L
41	KEYOUT 3	O		L
42	KEYOUT 2	O		L
43	KEYOUT 1	O		L
44	TEST	I	Test data (for production)	L
45	LC7570③	O	LC7570 ③ enable	H
46	LC7570②	O	LC7570 ② enable	H
47	FL BLANK	O	FL blanking (light off)	L
48	LC7570①	O	LC7570 ① enable	H
49	PLL CE	O	PLL (CX7975B) chip enable	L
50	CLK	O	Clock (serial transmission)	H
51	DATA	O	Data (serial transmission)	H
52	V _{cc}	-	+5V power source	-

6. FOR F-701/HE, F-701-G/HE AND HEWZI TYPES

CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

F-701/HE, F-701-G/HE, HEWZI and F-701/HEWZ have the same construction except for the following :

Mark	Symbol & Description	Part No.				Remarks
		F-701 /HEWZ	F-701 /HE	F-701-G /HE	F-701-G /HEWZI	
NSP	MAIN assembly	AWZ4098	AWZ4099	AWZ4099	AWZ4098	
	POWER assembly	AWZ4100	AWZ4525	AWZ4525	AWZ4100	
	Rotary knob	AAA1012	AAA1012	AAA1013	AAA1013	
	Button(MEMORY SCAN, MEMORY, CLASS)	AAD1682	AAD1682	AAD2301	AAD2301	
	Station button A (ABS)	AAD2218	AAD2218	AAD2222	AAD2222	
	Station button B (ABS)	AAD2219	AAD2219	AAD2223	AAD2223	
	Name plate (Metal)	AAM1029	AAM1029	.....	.....
	Budge brown 3156N	.....	.....	PAN1262	PAN1262	Name plate
	Packing case	AHD2241	AHD2241	AHD2246	AHD2246	
	Panel base	AMB1962	AMB1962	AMB1963	AMB1963	
	Front panel	ANB1497	ANB1497	ANB1498	ANB1498	
	Bonnet	AZN1745	AZN1745	ANE1269	ANE1269	
	Ground plate	ANK1091	.....	.....	ANK1091	
	Operating Instructions (German/Italian)	ARC1334	.....	.....	ARC1334	
	Operating Instrucions (English/German/French/ Italian/Swedish/Dutch/ Spanish/Portuguese)	.....	ARE1229	ARE1229	.....
	Screw	BBT30P060FZK	BBT30P060FZK	BBT30P060FNI	BBT30P060FNI	

MAIN ASS EMBLY**AWZ4099 and the AWZ4098 have the same construction except for the following :**

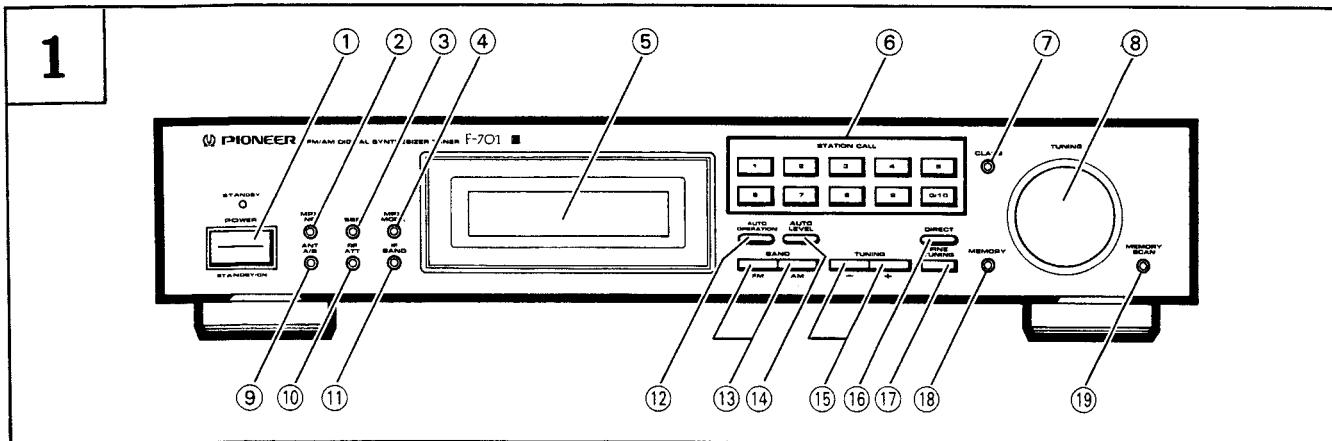
Mark	Symbol & Description	Part No.		Remarks
		AWZ4098	AWZ4099	
	C615, 616 C617, 618 C620, 621	CEEA470M25 CQMXA682J100 CKDYZB152K50	CEEA100M25 CQMXA822J100	
	L602 - 604	LAU010K	.....
	R603, 605 R604, 606 R612, 613	RDR1/4PM682J RDR1/4PM202J RDR1/4PM471J	RDR1/4PM333J RDR1/4PM102J RDR1/4PM102J	

POWER ASSEMBLY**AWZ4525 and the AWZ4100 have the same construction except for the following :**

Mark	Symbol & Description	Part No.		Remarks
		AWZ4100	AWZ4525	
△	L701	ATF1117	.....

7. PANEL FACILITIES

FRONT PANEL FACILITIES



(See Fig. 1)

① POWER STANDBY/ON switch/indicator

This is the switch for electric power.

ON : When set to the ON position, power is supplied and the unit becomes operational.

STANDBY : When set to STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

The STANDBY indicator lights when the power is STANDBY, and goes out during ON.

NOTE:

- As long as the power cord is connected to the outlet, the memory continues to be protected.
- If the power cord is unplugged, the memory will be retained for several days.

② MPX NR button

When MPX NR is on, MPX NR indicator lights up.

During reception of stereo broadcasts where the signal is weak, set this to ON if noise is a problem. Noise will be suppressed and sound quality will become clearer.

NOTE:

- If MPX NR is turned on during FM reception, the MPX MODE automatically switches to AUTO.
- This button's status is preset for each station in station memory.
- This does not operate during AM signal reception or when the broadcast is monaural.

③ SSS button

When SSS is on, SSS indicator lights. If turned on during reception of AM or when during reception of a manaural broadcast, this will produce a simulated stereo effect which provides rich ambience.

SSS: Spectrum Simulated Stereo.

NOTE:

- If SSS is turned on during FM reception, the MPX MODE automatically switches to MONO.
- This button's status is preset for each station in station memory.

④ MPX (multiplex) MODE button

Mode changes as follows each time this button is pressed:



This button does not affect AM reception.

• AUTO:

AUTO indicator lights up.

Depending on the broadcast station, STEREO or MONO is automatically selected.

STEREO indicator lights up when a FM stereo broadcast is received.

NOTE:

When the signal level is too weak for reception, sound output is automatically muted.

• MONO:

MONO indicator lights up.

To receive stereo broadcasts in monaural.

If there is a lot of noise during stereo reception of a weak signal, you can reduce the level of noise by switching to MONO.

NOTE:

- Muting is not effective even when the signal level is weak.
- The setting of this button is memorized together with the station in the station memory.

⑤ Operation display

⑥ STATION CALL buttons

Use these buttons to preset stations and to receive already preset stations.

They are also used when performing direct access tuning.

⑦ CLASS button

Use to switch between preset memory classes 1 to 4. In each class, one station can be memorized in each of the 1 to 10 STATION CALL buttons, enabling a total of 40 stations to be memorized.

⑧ TUNING knob

Use for manual tuning. To raise the frequency, turn in a clockwise direction; to lower the frequency, turn counterclockwise.

⑨ ANT A/B button

Selects between two antennas connected to the FM antenna A and B terminals. ANT- [A] or ANT- [B] indicator lights up.

NOTE:

This button's status is preset for each station in station memory.

⑩ RF ATT button

Use when FM reception is too strong, resulting in a distorted sound. The RF ATT indicator lights, and the set attenuator level is indicated in the station/signal display. Press once and the current level is displayed. Each subsequent time the button is pressed, the level changes in the following order:

→ 10 dB → 15 dB → 20 dB → 0 dB (RF ATT OFF) →

Normally, this button should be set to 0.

NOTE:

This button's status is preset for each station in station memory.

⑪ IF BAND button

Each time this button is pressed the bandwidth of the IF circuit switches between "normal" and "super narrow" for the FM band and the AM band.

The selected bandwidth is displayed as follows:

The NORMAL or SUPER NARROW indicator lights up.

Set to SUPER NARROW in case of interference from other stations.

NOTE:

The setting of this button is memorized together with the station in the station memory.

⑫ AUTO OPERATION button (During FM reception only)

Press this button, and the unit automatically switches between the following modes to find the one for optimum reception.

- RF ATT (10/15/20/0)
- ANT A/B
- IF BAND (NORMAL/SUPER NARROW)
- MPX NR (ON/OFF)
- MPX MODE (AUTO/MONO)

Automatically switches to mono in case of interference.

Muting turns on automatically if signal is weak.

⑬ BAND selector buttons**FM:**

Press to receive FM broadcasts.

AM:

Press to receive AM broadcasts.

⑭ AUTO LEVEL button (During FM reception only)

This lets you select from among six signal threshold levels, to determine the received signal level above which Auto Tuning will detect a station and stop. The Signal indicator and Station/Signal display indicate the set level. If the station's signal level is lower than the set threshold level, tuning will not stop at that station. Press once and the current level is displayed. Each subsequent time the button is pressed, the level changes in order.

⑮ TUNING (+, -) buttons

If you press and immediately release the button, the frequency changes a step at a time. If you keep the button depressed for a few moments before releasing it, then auto-tuning operates and stops at the first station received.

You can set the signal level you want to be regarded as a station with the AUTO LEVEL button (during FM reception only).

⑯ DIRECT button

When this button is pressed, the STATION CALL buttons function as ten-key number buttons for direct input of the desired reception frequency.

When FINE TUNING is on during FM reception, frequencies can be specified in 10 kHz steps. If FINE TUNING is off, frequencies can be specified in 50 kHz steps.

⑰ FINE TUNING button (During FM reception only)

Use this when sound is distorted owing to radio interference even though you are tuned to your desired frequency. When FINE TUNING is operating, the FINE indicator lights.

During FM reception, the frequency is changed in 10 kHz steps. (When FINE TUNING is off, it changes in 50 kHz or 100 kHz steps.)

By changing the frequency slightly with the TUNING (+, -) buttons, noise caused by interference can be minimized.

NOTE:

- When FINE TUNING is on and no station is being received, muting is applied automatically to prevent noise. Muting is not applied when a station is received, even if there is much noise and interference.
- Stations tuned using FINE TUNING can be preset.
- FINE TUNING is not possible with TUNING knob.

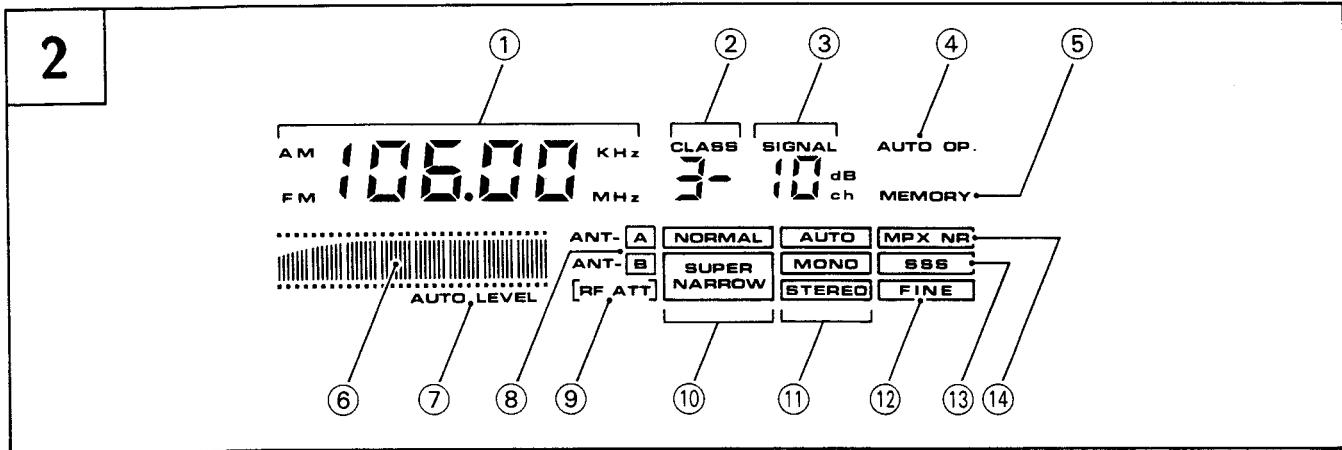
⑱ MEMORY button

Press to memorize preset stations. The MEMORY indicator will remain lit for several seconds. While the indicator is lit, select the class you want to memorize with the CLASS button, and press the STATION CALL button (1 through 0/10) you want to memorize.

⑲ MEMORY SCAN button

Press to receive currently selected class and preset stations for a few seconds in sequence. Press again and reception of the station presently being received will continue.

Operation display



(See Fig. [2])

① Frequency indicator

Shows reception band and frequency.

② CLASS indicator

Shows preset memory class 1—4.

③ SIGNAL level/STATION No./RF ATT level indicator

- After performing Manual tuning, Auto tuning, or Direct tuning, "SIGNAL" lights, and signal strength is displayed.
When the signal is weak, "LO" is displayed. If this happens, point the antenna in the direction that provides optimum reception.
When the signal is too strong, "HI" is displayed. When this happens, press the RF ATT button, and adjust the level.
- When recalling a station preset in a STATION CALL button, STATION is displayed. If you press the STATION CALL button of the recalled station once more, "SIGNAL" lights, and the received signal strength is displayed for several seconds.
- During RF ATT operation, the attenuation level is displayed for several seconds (during FM reception only).

④ AUTO OP. indicator (red)

This lights when AUTO OPERATION is operating.

⑤ MEMORY indicator

Lights for a several seconds when MEMORY button is pressed.

⑥ Signal indicator

When setting AUTO LEVEL, the reception level step is displayed.

⑦ AUTO LEVEL indicator

This lights when setting AUTO LEVEL.

⑧ ANT- A, ANT- B indicators

These indicate the selected antenna.

⑨ RF ATT indicator

Lights when RF ATT of 10 dB, 15 dB, or 20 dB has been selected.

⑩ NORMAL, SUPER NARROW indicators

These indicate the selected IF BAND mode.

⑪ AUTO, MONO, STEREO (red), indicators

AUTO/MONO: Indicates the selected MPX mode.

STEREO: When the MPX mode is switched to AUTO, this lights when an FM stereo broadcast is received.

⑫ FINE indicator

This lights when the FINE TUNING button is pressed to change the frequency in 10 kHz steps during FM reception.

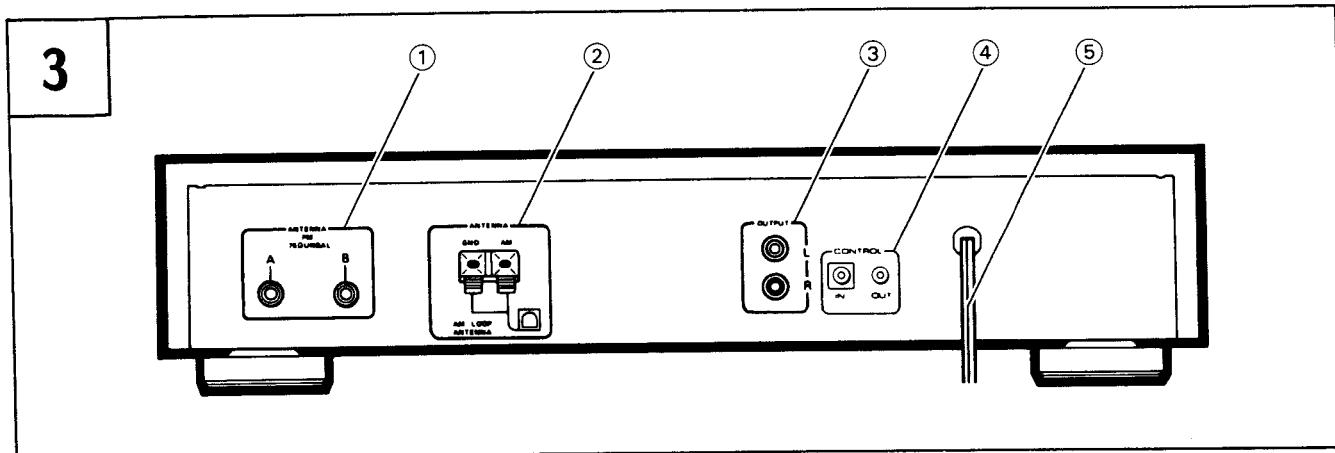
⑬ SSS indicator (red)

This lights when SSS (Spectrum Simulated Stereo) is ON.

⑭ MPX NR indicator (red)

This indicator lights when the MPX NR is operating.

REAR PANEL FACILITIES



(See Fig. 3)

① FM ANTENNA jacks

Connect to the accessory FM T-type antenna cord or a separately purchased FM antenna. There are two jacks, A and B, so you can connect two antennas pointing in different directions towards different broadcasting stations.

② AM ANTENNA terminals

Connect to the accessory AM loop antenna or a separately purchased AM antenna.

③ OUTPUT jacks

Connect to a stereo amplifier's TUNER jacks.

④ CONTROL terminals

⑤ Power cord

8. SPECIFICATIONS

FM Tuner Section

Frequency range	87.5 MHz to 108 MHz
Usable Sensitivity	
NORMAL	Mono: 11.2 dBf, IHF (1.0 μ V/75 Ω)
50 dB Quieting Sensitivity	
NORMAL	Mono: 15.9 dBf, IHF (1.7 μ V/75 Ω) Stereo: 36.2 dBf, IHF (17.7 μ V/75 Ω)
Sensitivity (DIN)	
NORMAL	Mono: 0.8 μ V/75 Ω Stereo: 26 μ V/75 Ω
Signal-to-Noise Ratio	Mono: 94 dB (at 80 dBf) Stereo: 87 dB (at 80 dBf)
Signal-to-Noise Ratio (DIN).....	Mono: 76 dB Stereo: 73 dB
Distortion (at 80 dBf)	
NORMAL.....	Mono: 0.03 % (1 kHz) Stereo: 0.05 % (1 kHz)
SUPER NARROW.....	Mono: 0.2 % (1 kHz) Stereo: 0.25 % (1 kHz)
Capture Ratio	
NORMAL	1.0 dB
Alternate Channel Selectivity	
NORMAL.....	80 dB (400 kHz)
SUPER NARROW	80 dB (300 kHz)
Stereo Separation	60 dB (1 kHz) 50 dB (20 Hz to 10 kHz)
Frequency Response	20 Hz to 15 kHz (± 0.2 dB)
Image Response Ratio	80 dB
IF Response Ratio	100 dB
AM Suppression Ratio	70 dB
Spurious Response Ratio	80 dB
Subcarrier Product Ratio	60 dB
Muting Threshold	23.2 dBf – 61.2 dBf (6 step)
Antenna Input	75 Ω unbalanced

AM Tuner Section

Frequency range	531 kHz to 1,602 kHz (Step 9 kHz)
Sensitivity (IHF, Loop antenna)	150 μ V/m
Selectivity	40 dB
Signal-to-Noise Radio	50 dB
Image Response Ratio	40 dB
IF Response Ratio	60 dB
Antenna.....	Loop Antenna

Audio Section

Output (Level/Impedance)	
FM (100 % MOD)	650 mV/0.9 k Ω
AM (30 % MOD).....	150 mV/0.9 k Ω

Miscellaneous

Power requirements	a.c. 220 – 230 Volts~, 50/60 Hz
Power Consumption	20 W
Dimensions	420 (W) x 86 (H) x 334 (D) mm
Weight (without package)	4.0 kg

Furnished Parts

FM T-type Antenna with 75 Ω PAL Connector.....	1
AM Loop Antenna	1
Connecting Cord with Pin Plugs.....	1
Control Cord.....	1
Operating Instructions	1

NOTE:

Specifications and design subject to possible modification without notice due to improvements.

MAINTENANCE OF EXTERNAL SURFACES

- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzine, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.

STATION PRESET "MEMO"

It is recommended that you make a note of the preset stations.

STATION No.	1	2	3	4	5	6	7	8	9	0/10
CLASS 1										
CLASS 2										
CLASS 3										
CLASS 4										